

**UNIVERSITY OF GLASGOW**

**Department of Urban Studies**

**CITY COMPETITIVENESS AND ATTRACTIVENESS: A NEW  
APPROACH TO EVALUATE ECONOMIC DEVELOPMENT IN  
MEXICAN CITIES**

by

**Francisco Antonio Serrano**

A thesis submitted in partial fulfilment of the  
requirements for the degree of

**PhD in Urban Studies**

Glasgow, 27<sup>th</sup> January 2003

Thesis Supervisor: Professor William F. Lever  
Department of Urban Studies  
University of Glasgow

To my beloved son Carlos Antonio (Canito)...

To Betty...

## **ACKNOWLEDGEMENTS**

I want to express my most sincere recognition to Professor William F. Lever, my Ph.D. supervisor, who gave me the opportunity to carry out this research. Without his valuable support and wise advice this thesis would not have been completed.

I would like to thank Professor John Parr for his professional advice and friendship.

I thank specially to **"The Carnegie Trust for the Universities of Scotland"** for its research grant, which enabled me to complete this thesis.

To the journal **"Urban Studies"** for its studentship.

## Summary

This research attempts to build a model to evaluate the economic development level of cities using a set of factors associated to the concepts of competitiveness and attractiveness. Traditionally competitiveness has only been related to rankings with a very limited contribution to regional and urban economics. At the same time, the concept of attractiveness is gaining more attention from economists who now define it in terms of competition for capital, people and government resources. Attractiveness is now linked to stages of economic growth to provide a broader framework to analyse the process in which cities are immersed to reach a higher standards of quality of life for their inhabitants.

The literature review presents the main definitions of economic development, competitiveness and attractiveness within the urban context. The papers selected for this section provide the structure to link the competition process among cities and the efforts to attract capital by local government, to the development process.

It is claimed that cities do compete with each not just for resources or people, but also for great events, resources from international organisations and institutions, prizes, infrastructure of high calibre, and even for an image among the public. On the other, attracting investment is not just reduced to companies from any economic sector. The theory suggests that making the city more attractive implies a competitive process to create the appropriate conditions for businesses to work in a stable environment. “Redefining” the cities’ image is useless if it is not accompanied by a total reengineering of the government’s activities, where support for business plays an important role.

The methodology presents and justifies (supported by claims made by different authors) that there is still a need to create more models in the area of urban economic development. So far, there is not a set of variables to evaluate the economic development level of cities in the same way as in the case for countries. What is more, since the area of urban economics has just emerged as a recognised and robust



discipline, more efforts are needed to increase the stock of knowledge. More models where cities are at the core of the modelling process will contribute notable to the aim.

The empirical analysis begins with the presentation of the economic asymmetries among the sample of 40 Mexican cities. It is concluded that the economic policies of the central government in the last ten years have benefited those places which were already rich. Evidence is presented using the factors and variables of competitiveness and attractiveness with secondary data in order to illustrate the magnitude of the asymmetries among cities.

In the second part of the analysis, two econometric models are presented. The first one intends to “capture” the variance of the 72 variables used in the experiment. The objective is to build an equation portraying urban economic development. However, as it was expected, the high statistical correlation among the variables led to a model including only 9, very few if the model is intended for simulating the impacts of decisions made by local authorities. The second model is constructed using all the factors and variables with the idea of being able to simulate as many as possible urban policies in a dynamic context. The results provided by the model are consistent with the results presented in the first part of the empirical analysis and seem to fit well the data for the sample selected.

Finally, it is concluded that it is possible to build an economic development model fitting the data for the selected sample of Mexican city, using competitiveness and attractiveness factors.

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# Introduction to the research

The aim of this research is to provide both a theoretical and empirical structure to study the impacts of the factors associated to urban competitiveness and attractiveness on economic development. The proposal is to link competition and investment attraction to economic growth and development in order to explain the economic asymmetries between cities within a country.

The relevance of such research relies on two motives: first, the need for ad-hoc models applied to particular countries and even more in those with extreme economic conditions and second, the need to demonstrate empirically that competitiveness and attractiveness are more than concepts to create and support rankings of cities aiming at the morbidity of “economic competitors” who want to know who is the best and who is the worst.

As it could be inferred the themes covered are immersed in the urban economic and policy context. It has been argued elsewhere that the study of urban economies is subject to disenchant by traditional economists and even more by regional economists who dismiss the idea of the city as a unit of analysis. However, this particular problem is mainly due to the lack of data at this level and the incapacity of traditional econometric models to capture the particularities of interactions at city level. Other problem has been the incapacity to compare data from cities in different countries because of the variations in which the data are conceptualised, adding complexity and consequently more distortion to the possible outcome. In any case, the current work solves this problem by comparing cities’ data from only one country. Mexico due to its particular geography is one of the few countries in the world with a census with a large collection of variables at city level. As a consequence, the opportunity to study cities, rather than regions or any other unit becomes easier giving opportunity to carry out research from different perspectives.

Therefore, this thesis contributes providing an analysis and a model to evaluate the economic development opportunities of a group of Mexican cities under a dynamic



approach. The first objective is to demonstrate whether or not it is possible to find the economic asymmetries of a set of cities using competitiveness and attractiveness factors. The second is to model urban economic development as a function of competitiveness and attractiveness factors under two approaches: firstly, using the traditional regression model and secondly, a new model derived from a diverse range of academic studies.

To the possible question of why Mexico and not any other country in the world, the answer is because most of the research is based on developed countries, leaving developing countries aside and with almost no opportunity to understand their problems. Besides, they have especial attributes that require a different approach from those used in developed countries, i.e. growing populations, manufacturing is the base of the national economy, low educated people, endemic illiteracy levels, just to name but a few. To-day Mexico is the largest and strongest economy in Latin America and the 11<sup>th</sup> largest population in the world, not mention that Mexico City is the second largest human agglomeration in the world.

The end of the 20<sup>th</sup> and the beginning of the 21<sup>st</sup> century could be characterised by the increasing competition between cities and countries all over the world for capital to create jobs and economic growth. National and local governments are aware of the importance of creating pro-business policies and stable economic conditions if they want to attract capital and high skilled people. The new paradigm points out to analyse the competitive conditions to attract capital to create the proper atmosphere to induce economic growth firstly and then economic development.

The time at which this thesis has been written was surrounded by events that for many academics and philosophers will change the course not just of Mexico but of the entire world. It is important to mention these details because they posit especial conditions that probably no other research of this time-length can embrace.

The first event deals with the overthrow of the political party PRI (Institutional Revolutionary Party) in July 2000 after 74 years of ruling Mexico. For the first time in modern history a different party would lead the destiny of 100 million people. The new right-wing party in power PAN (National Action Party) is seen as the hope for 51

million people living in poverty (19 million in extreme poverty). By the last trimester of 2002, after almost two years of government, the results have been disappointing: two million more people in poverty and three more in extreme poverty, an economy with 0% economic growth in 2001 and a lot of political scandals, not to mention a declared war between the parliament (with a majority of PRI representatives) and the president. Fortunately for this work, there is an opportunity to compare the last two and the first two years of two presidential periods without trying to politicise the results of such comparison since a very short interval of four years might not be enough for a proper analysis.

The second event is the increasing number of guerrilla groups in the centre of the country. Contrary to the expectations generated by the current president, social unrest is bursting as well as social inequalities. Nonetheless, the fight against government and institutional corruption is paying-off benefits.

Finally, the fact that September 11<sup>th</sup> occurred during the time-span of this work deserves some comments since it is already affecting the economy of the border cities in both countries. For the American side, cities such as El Paso, San Diego, or Laredo, have seen their economies to run down due to the increasing time needed to carry out the inspection of trucks, cars and people. Since these cities depend on purchases made by Mexican people, security measures have decreased the number of people crossing the border per day and of course the potential number of customers for the shops in these places. In the Mexican case, the impacts are on the assembly companies which have seen their competitive advantage to fade. Trucks moving parts and products to and from assembly factories in Mexican border cities such as Cd. Juarez, Matamoros, Tijuana, are now stopped for detailed inspections increasing the time to cross the border from 8 hours on average to 76 hours on average in mid May 2002. Obviously this has a cost for companies which are now menacing to relocate in American soil if Mexican authorities do not reach a fast agreement with the American authorities.

The research takes basically two approaches to evaluate the impacts of competitiveness and attractiveness factors on economic development: a theoretical perspective where the analysis of economic differences among cities provides the grounds for a formal model, and a mathematical perspective where the modelling

process is the fundamental issue in order to argue that there is a possibility for new models based, at least, partially on factors under the control of governments.

The first part of the empirical chapter looks at the possibility of constructing a model using a regression equation (panel data). The second part is an entirely new proposal to assess economic development using competitiveness and attractiveness factors and their variables. This provides various advantages from a practical perspective:

1. The possibility to simulate the impacts of local governments' policies.
2. To compare dynamically the trends of others cities with respect to a particular one.
3. To analyse the optimum allocation of resources to increase the development level of one city with respect to other (sensitivity analysis)
4. To provide a framework for categorising cities and therefore avoiding damaging competence.

The basic questions from which this research starts are what make the cities more attractive to inward investment? What is the impact of city competitiveness and city attractiveness factors on the economic development process? And finally, how could these interactions be portrayed?

Little attention, if any, has been given recently to the concepts of city attractiveness and city competitiveness in their role in urban economic development. On one hand, city competitiveness is envisaged as a ranking of cities where the important issue is the ranking itself. On the other, the study of city attractiveness is providing the framework to understand what makes the cities attractive for both people and companies but disconnected from the notion of development.

Consequently, this thesis contributes to the economic and urban policy science adding a new perspective to the study of urban economic development where the factors of city attractiveness and competitiveness are at the core of the economic analysis. The urban policy framework provides the strategies followed by local and regional governments in their search for better standards of living, representing the supply side of the problem. The economic framework establishes the formal allocation criteria for



maximizing the utility of resources under the notion that the needs of any population are unlimited while the resources are limited.

The current work can be divided into four broad sections. The first one encompasses chapter 1 and 2 and describes and analyses the concepts of economic growth and development both at national and local level. Section 2, chapters 3 and 4, deals with the definitions of city competitiveness and attractiveness describing the factors and variables associated to each of them. Section three, Chapter 5 and 6 explains the methodology used for creating the models (panel data regression and the proposed) and for assessing the economic situation of the cities selected in the sample. Finally the last section encompasses the empirical chapters where the results are exposed and discussed. As in any work, the last chapter comprises the conclusions and implications for further research.

To sum up, the coincidence of the new census with the new government and with the international events cited before, not to mention the production of this research effort, provide a unique opportunity to model the “new reality” in which the country will evolve in the next century. Thus, the models created at this stage will have opportunity to start from scratch since, as the history proved it, all the old paradigms didn't worked completely to create a new world.

# Chapter 1

## A framework for modelling urban economic development

### Introduction

The need for econometric models to represent the urban system is growing and it is impossible to ignore the fact that the city is becoming more relevant as a unit of analysis. The new trend points towards models capable of representing short term effects rather than forecasting economic cycles for a national economy. This trend is based on the fact that error assessment and time factors negatively influence the outcome of any analysis for regional data. What is more, decision makers within local governments base their decisions on models that provide opportunities to evaluate impacts rather than in possible predictions.

New information and data collection systems allow the public and private sector decision makers to portray the local economy with more accuracy than in the past. Sufficient sources of information and data now exist for many important issues in the local and national economy which, when properly interpreted and analysed, provide clear insights as to the present economic strengths and weakness of an urban economy. These sources can also give precise guides to investors and policy-makers in the public sector as to what to do to improve the economic base of a city and thus improve the general conditions of the population, while investors obtain the maximum possible benefits.

Nonetheless, it is important to understand how the economic development cycle builds up at national level and the role played by economic growth in inducing it. Therefore, this chapter presents the main differences between development and growth as a framework for understanding the economic development process. The chapter shows that economic development and growth are cumulative processes where time factors determine the output of strategies and policies.

The approach of this section is descriptive, referencing the main theories of economic development and growth. Yet, some of the most relevant theories of urban development are studied and exemplified with references to particular Mexican cases. The origins of cumulative causation theories are also covered thus allowing the introduction of contentions allowing a greater understanding of the Mexican economy from an urban perspective; very much neglected in the last 20 years. Finally, time variables and the differences between competitiveness and attractiveness are illustrated as an introduction to further and deeper analysis in other chapters.

### **1.1 Why measure economic development?**

Countries and cities all around the world have economic cycles with ups and due to unpredictable internal or external events and to consumer expectations in the short and long term, which affect the aggregate production of locations. These cycles pose a problem for governments in their attempt to plan for future requirements for their habitants. Under this perspective, the planning process of the housing stock for forthcoming years, or the extent of infrastructure works required by a city could be difficult if the decision-makers do not know the future trend. Moreover, this lack of knowledge can be translated into unachievable economic goals or incomplete works because economic crisis might hit budgets and cause the cancellation of projects.

The relevance of modelling economic development relies upon the need firstly, to assess the present performance of an economy, including social, political and cultural indicators. Secondly, the possibility of evaluating the impacts of short and long term policies in an economy in order to avoid wasting resources for present and future generations.

The main responsibility for all governments is to improve the quality of life of their inhabitants. Emphasis is placed on economic as well as social and environmental factors because they are managed directly by governments. In this case, economic development is the central part of almost any government plan to improve the prevalent conditions in a geographical region. Development implies improvement and change, or in some cases, the less possible damage against unforeseen negative events. As it is well documented, all economies around the world experience ups and downs due to their own policies or due to external sources. In the second case,



economic literature has demonstrated that the more open the countries are, the more they are prone to be affected by others' policies. Examples of this are the Mexican crisis (known as "Efecto tequila" or "Tequila effect of 1995) which affected most of all the Latin American countries, or the Japanese crisis affecting many countries all around the world.

The accomplishment of economic development goals for the public sector also represents a performance measure of its policies and strategies among its population. Citizens may not accept certain policies or strategies and could "punish" current governments simply by voting against them in the next elections, where popular democracy exists.

The private sector makes various types of decisions according to the way it perceives national and local economy trends. Investment decisions rely upon the expected long-term situation; expected growth makes investors take more risks, while contractions would lead to risk-adverse situations where investment would be postponed for the future. These conditions largely influence the economic development and growth process at any level, either national or regional.

Direct investment will create employment and this will lead to an improvement in the whole economic system. However, when investors perceive that the economy will slow down, it is very possible they will decide to take their money out and to invest it in other places with better expectations. Even when this could not be true, (because in the case of direct investment is very difficult to move a company from one place to another) it is possible to reduce the output and to make large-scale redundancies in order to decrease costs. The expected consequence is a reduction in the expected growth rate due to a high unemployment rate and a reduction in the purchase power of the region and therefore a marginal or nil, if any, economic development rate.

As it can be appreciated, the role of the private sector is very important since it is in most cases, the bigger investor in a country and the client for whom authorities attempt to create an stable economic environment. Governments design strategies to attract companies to locate in certain places, most of the time in areas where there is a high unemployment level. At the same time, companies look for competitive locations

where they can generate the maximum benefit with the lowest investment. Main roles in economic development projects are played by the private and public sector. However there is a new trend where by the people of a community are involved in the process. Community participation is now one of the most-used strategies in the achievement of local economic development, involving the residents of a defined area, both as leaders and as performers of the projects.

Reiterating the question of why we should measure local economic development, the following answers could be given:

1. Because it is necessary to determine the current stage of development; it is an assessment process.
2. Because it could be possible to visualize strengths and weaknesses in order to improve the economic situation; it is a strategic process.
3. Because benchmarking regions helps to see the effects of national policies in different regions; it is ranking process.
4. Because realistic goals can be set using economic development models; it is a forecasting process.
5. Because government, investors and citizens need to know where they are and where they can go. It is one way of identifying who is failing or where the failure is in an economy.

## **1.2 The case of Mexican cities: a justification**

This research project will be focused on the case of Mexico from 1990 to 2002 where possible, particularly a set of Mexican cities within the country. The relevance of selecting such a country relies on three strategic facts:

1. The year 2000 was a presidential election year where candidates and policy makers were required to demonstrate whether former economic policies had functioned or not.
2. Mexico's participation in various trade agreements, such as the North American Free Trade Agreement (NAFTA), the European Union Trade Agreement, to name but a few. This participation has impacted on cities in different ways which have not been evaluated properly. It seems that the northern cities are taking advantage of their geographical position to generate more business opportunities and are doing better than the southern cities. In a few words, uneven growth and



development has been produced due to externalities and geographical conditions not taken into account by the central government.

3. The new Mexican census became available in the year 2001, with fresh and detailed information at city level, making feasible more in-deep analyses and comparisons. Besides, data will allow cross-sectional analyses as a result of the availability of data from three censuses (1980, 1990 and 2000).

The fact that Mexico is a developing country included in the OECD, (Organization for Economic Co-operation and Development), and the uneven distribution of the economic wealth along the Mexican cities, make the case interesting enough to be studied. A pilot test was carried out previously (Serrano, 2000) testing variables and data availability from different sources obtaining positive results and identifying the chance to develop and improve the robust nature of the model.

### **1.3 The cities and the “Nation”**

It has been emphasized that developing countries face uneven distribution of wealth along their territories (Blakely, 1989). Some cities tend to develop more infrastructure or assets due to their geographical position, political interests, or historical situations. Another reason is the lack of knowledge by the central government about regional problems. National strategies do not have the same economic impact in all regions. Mexico is by no means an exception because cities in the north, specially those located close to the border with the United States of America, have enjoyed the benefits of the North America Free Trade Agreement more than any other places. As a consequence, the gap between the rich cities and the poor has grown substantially, creating the necessity to develop economic models able to provide information about the impact of national policies at city level.

Although the concept of “Nation” remains as strong as always, a new paradigm exists in which cities are taking on more responsibilities and making decisions affecting their economic development perspectives (Scott, 1998). Such is the case of local and regional governments giving “especial” incentives to large or medium companies to locate in their territories in order to generate employment and the related economic spillovers.

Regional and local authorities are also responsible for designing strategies to generate growth and development. However, there has been an overlap and conflict of policies and interests amongst the different levels of government, not just in the case of Mexico, but also in many other countries like Argentina or Spain.

The problem relies on the inherent differences the cities have within the same country due to different geographical and political conditions. On one hand, the implementation of national strategies or policies is permeated throughout two government levels (in the case of Mexico the system is as follows: Central government, 32 regional or state governments, and city-municipal governments), where the authorities could interpret the information according to their convenience (usually driven by their political ideology) affecting the economy of neighbouring states and cities. On the other hand, under simple scale economies, some regions have advantages due to their size, economic activities or political affiliation.

The new paradigm puts cities at the core of the analysis while underlying the necessary links among which increase their competitiveness and thus their opportunities to thrive, not only economically but also socially and culturally. These factors in the long term reform the economy of the cities making essential the creation of models envisaging sets of cities in order to portray the interactions, which determine the economy of a country.

#### **1.4 The rationale for economic growth**

The concept of growth has been mainly studied during this century and more precisely after the end of the Second World War as a natural response to the reconstruction of Europe and Asia. After the devastation of countries like Germany, Italy and Japan, academics and policy makers started to define strategies to help these countries to solve their scarcity problem. Almost anything was required, from food supplies to steel and cement to construct flats and buildings to house the remaining habitants as well as the new companies aimed to rebuild the cities involved in the war (Kuznets, 1958). At this point the question was how to make the cities' economies grow?

The starting point of the rationale for growth is clear. Cities as Berlin, Warsaw or Rotterdam were almost in ruins, which meant everything had to be produced in order to provide the goods needed by these societies. Kuznets said that growth is simply the sustained and increasing production of goods, associating “increase” to growth. However, according to Kuznets, modern economic growth has two main characteristics:

1. Sustained and substantial rise in the product per capita in all cases.
2. An increase in the total population, in almost all cases.

Blair (1995) claims that growth can be defined either as an improvement or a detriment in the present conditions of an economy or industrial sector. He argues that economic growth is responsible for providing jobs and resources to support improvements in order to increase the standard of life within a society. Growth can be a detriment when it is concentrated in a few people and there is no money flow to employees or in general to other sectors of society.

The definition of Blair provided allows the exemplification of one of the most common failures in economic strategies by local or regional authorities. Governments work to attract companies to their regions with the idea of generating employment and development. Sometimes, however, this strategy fails because the new companies are unable to operate for a period long enough to make a profit either due to their inefficient management or to external/internal shocks. In this way, the time and resources invested by local governments are wasted.

Dietz and Cypher (1997) defined economic growth as the increase or decline of the total income disposable by a government to exert in any time period in order to provide better assets for their inhabitants. Growth deals with accumulation rather than distribution, which is a characteristic of development.

Although the definition and conceptualization of growth and development were considered synonymous for a long time (Malecki, 1997), Rostow's work “Stages of economic growth” (1957) made a clear differentiation between development and growth. The latter was defined in terms of accumulation; more jobs, more income per



capita, higher domestic product, among others. Indeed, these were and are still the traditional indicators for economic growth.

Growth is concerned with increases in population within an area, increases in prices or the number of products and services sold in an economy, in other words, it is concerned with the productive and consuming capacity of a geographical area and with change and redistribution (Malecki, 1997).

It is easy to see that this productive level of societies varies from one place to another. According to Rostow (cited by Malecki, 1997; p.12) almost all societies can be classified in any of the following 5 stages of growth:

1. The traditional society.
2. The preconditions of take-off.
3. The take-off.
4. The drive to maturity.
5. The age of mass consumption.

The problem of Rostow's model relies on its excessive rigidity and the lack of explanation about the inputs required passing the transitions among the stages (Krugman, 1995; Todaro, 1999). Additionally, it has been demonstrated empirically by Kuznets (1957) that at low-income levels, growth tends to produce more inequalities. This theory is known as the inverted-U curve and relates per capita income and Gini's coefficient.

Growth can also be defined in terms of change along time. Chaudhuri (1989) claims that all theories related to economic growth (Smith's, Ricardo's Marx's; Harrod and Schumpeter, and Neo-classical theorists) have in common "change" (positive or negative) and time. Indeed, this change is a central part in economic development. The main difference between economic growth and economic development is "structural change" understood as a redistribution of resources in the economic system together with a reorganisation of the institutions supporting it to create appropriate exchange conditions.

Chaudhuri went against the traditional “rule of iron<sup>1</sup>” in economic growth for explaining why poor countries fail to grow. The conclusion is poor countries or regions do not grow just because they are unable to save, they fail because the use of their resources is not efficient even though they have high levels of savings.

A more technical definition about growth is provided by Sundrum (1990). He said that growth is a series of stages (following the tradition of Rostow) where the first one is the description of the production level of a region. The second stage deals with demand aspects, where the important point is how to increase the demand of goods and services and according to him, this is the fundament of growth. Finally, once the output has reached its maximum it is necessary to improve the efficiency through the allocation of resources in a different way, producing more with the same assets.

In the long term, Sundrum (1990) argued, economies tend to expand their productive capacity to meet the demand rather than looking for new combinations of resources to reach a higher productivity level.

Until now, the concept of economic growth has mainly been approached under a national perspective. Nevertheless, at regional level its dimensions change, since there are some issues characterizing sets of cities or metropolitan areas. The next section deals with some particularities about regional economic growth.

### **1.5 Regional and urban growth: main differences with the national level**

Cities and regions as political entities (in the case of Mexico the Regional or State authorities or in the case of Spain Autonomic communities) are considered sub-nuclei of a higher system called “nation”. This hierarchy imposes some characteristics on the cities and regions in comparison to the nation:

1. Openness to industrial elements, industrial exchange with no government restriction or taxation.
2. Commuting, people working in a place and living in other.

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<sup>1</sup> This “rule” says that “as long as the amount of savings, coupled with the fruitfulness of those savings, results in a rate of growth of output that is greater than the rise of the population, cumulative economic growth would take place.” (Malecky, 1997; p. 12)

3. No local currency, depend completely on the nation's currency.
4. Fiscal authority limited by central government.
5. Policy option limited to their area of influence.

Due to these facts, the concept of growth at regional or city level varies, and consequently it is required to specify these variations to avoid excessive generalization.

Regional economic growth has the same conceptualization as national economic growth, and can be defined in the same terms. The main differences are related firstly to the ability of regional authorities to modify or correct unbalances and to design strategies and secondly to exchange flexibility (Button, 1976). For instance, monetary policies cannot be used for regional governments to enhance economic activities or to correct distortions in the market because they are carried out by central governments. A second example would be the way in which trade between regions cannot be taxed to avoid unfair competition.

On the other hand, exchange flexibility is an advantage for regions. In this case trade among cities is not subject to any restrictions allowing the free transit of goods and services within a country. In this way companies can enlarge their market not restricting their operations to a single city but rather to many others.

Blair (1995) claimed that urban growth is mainly based on exports. His argument comes from the comparison between Thompson's (1968) and Jacob's (1969) models, where the first stage is to expand the local economy through exports. However, he points out that even these recent models have failed to answer how cities can make the transition from one stage to another. It can be noted that regional economic growth models have exactly the same problem as national ones, making clear the fact that not because the scope of analysis is reduced by the researcher to local level, models would tend improved.

Blakely (1989) made a straight differentiation between regional and national growth in terms of company performance. For him, some regions improve because companies perform better than others located in other regions. Yet, Porter (1995) claimed that



cities grow because their inhabitants clearly perceive these gains reinforcing the virtuous circle.

### **1.6 The rationale for economic development**

Economic development has been the main objective for developed countries since the beginning of the 1980s mainly owing to their ability to generate, among the population, high incomes and good basic services (Wolman and Spitzley, 1996). The stage of sustained growth has been reached and now the attention has turned to the inequalities produced by such a growth. In the case of developing countries, there is still a debate about the choice to pursue economic growth or economic development. The question here is why development instead of growth? A basic answer is provided by Cypher and Dietz (1997), who argued that growth itself is not able to distribute fairly the wealth generated by economic growth along the whole population of an geographical area. They also add that markets are not perfect and governments must intervene in order to halt capital concentrations and consequently to help others to obtain the benefits of such growth.

While economic growth deals with increases, economic development deals with distribution and improvement. Todaro (1999) defines economic development in terms of percentage of growth. He says that for a country striving for development, it means growth levels of 5 to 7% or more per year in its GDP.

Todaro seems to agree with the view of Kuznets who claimed that with high growth levels is not necessary to think about development, the economic system will allocate resources in the best way and all citizens will obtain benefits. In fact, the economic theories of the 1960s and 1970s tend to generalize that growth and development would occur just by creating the appropriate policies at central and regional level (Malecki, 1997). This has been demonstrated to be a fallacy at least in developing countries where wealth concentration has soared.

A more social definition about what is meant by economic development is provided by Cypher and Dietz (1997). Their definition explains that economic development is a process of redistributing the resources generated by an economy among all the citizens within a country, in order to improve their standard of living. They emphasize

that economic development relates social and cultural factors as “assets”. The fight against poverty is a core concept in economic development.

Parr (1999) says that growth and development have been used as synonymous, but the latter has the connotation of structural change. Indeed, this “change” deals with the notion of including institutions (whatever they are for), governments and citizens in an effort to redesign the economic structures aimed to support the new way of fighting poverty and improving quality of life. Malecki (1997) also adds productivity improvement as part of the definition of economic development.

It is important to mention that conceptualizing development and growth as synonymous seems old fashioned and an error since it is clear that development by all means includes more than economic factors (Todaro, 1999). In this sense, Malecki (1997) argued that economic development implies a interdisciplinary perspective, where models should incorporate not only economic but also social factors in order to portray the whole set of phenomenon immerse in a country or a region. The central point, he claimed, is to generate qualitative improvements in life for everybody.

Conroy (1975) cited by Malecki (1997) defined development as “improvements in the quality of life associated with changes –and not necessarily increases- in the size and composition of the population, the quantity and nature of jobs, and the quantity and prices of good and services produced locally.

Finally, Sen (1988), cited by Malecki (1997) summarizes economic development as “freedom to choose by increasing the real income” (p.14), and the only way to obtain more alternatives to choose from is by creating new market niches and by changing the existing ones. Indeed, the notion of freedom implies the need for more economic resources to provide the alternatives to buy.

### **1.7 Regional economic growth and development: Relevant approaches**

The purpose of this section is to explain the different theories related to urban and regional development in the context of Mexico. The explanation will be carried out using, where possible, urban examples. However, given the structure of the Mexican government levels, the application of some theories at urban level is not possible. It is



noticeable that even when the theories rely on the concept of development is not possible to remove the concept of growth. In some occasions, development includes growth as a primary stage, while in others growth is considered the central issue of any attempt to produce some kind of development.

It is imperative to mention a traditional debate in economics about economic growth and economic development. It has been argued that it is possible to have growth without development; but economic development is not possible without economic growth. However, it also possible to say that under certain circumstances the latter statement can be false as in the case of improved social services to provide health assistance, access to education, to mention but a few. Nonetheless neoclassical economists argue that this is not development, but improvements of conditions that should work with better standards. For the purpose of this research it is assumed that economic growth is a requisite of economic development for cities.

### *Neoclassical theory*

Neoclassical theory does not contribute to the explanation of economic development at regional level due to its lack of spatial dimension. However, large-scale economic models can be applied to certain urban regions in such a way as to explain wealth generation.

Neoclassicists are divided into two main areas: those who say that growth is endogenous and those arguing it is exogenous. Endogenous theory is relatively new; its followers are part of a trend questioning Solow and Swan's model. As explained in previous pages, Solow's model of growth is based in the notion that savings and capital accumulation permeate over the whole economic system producing increases. Indeed, this is the fundament of exogenous theory where technological progress and population growth are the bases. They are considered exogenous because they are not included in the standard production model.

The most representative endogenists, like Romer, Lucas and Scott maintain, according to Walker (1996) that "new investments lead to technological progress in the form of learning by doing. This assumed to be external at the firm level, but increasing returns to scale at the aggregate level" (p.5). The result is not just capital

accumulation, but also knowledge and better skills in the labour force. Endogenous theory claims that also investment in human capital produces and improvement in the economic system. Thus, policies promoting human capital development are expected to contribute to the economic growth of a region or a country.

Equilibrium and capital mobility are the most important factors in enhancing regional development under the neoclassical paradigm. "These concepts provide that all economic systems will reach a natural equilibrium if capital can flow without restriction" (Blackely, 1989; p.61).

Blackely (1989) explains if capital can move from places with high-wage/cost to low-wage/cost, the system will tend to equilibrium because wages will be equal in both places, offsetting any disadvantage among regions.

If regions and cities want to reach a higher development stage, they must use their resources in a manner that attract capital to maintain the positive economic cycle and therefore generate more economic resources. Reinforcing this spiral inevitably leads to more opportunities in terms of employment and production with the consequent improvement of the whole local economy.

Disadvantaged places can argue that needed resources should be supplied by the central government thus assisting them in achieving an economic equilibrium with surrounding areas. This is the approach Mexico has taken in the last 10 years. Market liberalization and privatization are the flagships of the presidential periods of Carlos Salinas de Gortari (1988-1994) and Ernesto Zedillo Ponce-De Leon (1994-2000). The emphasis has been on attracting foreign capital to compensate for the lack of savings held by the Mexican people and to generate employment. To keep economic growth, governments require money to sustain the services it provides as well as the subsidies and other handouts to their citizens. Thus, the budget deficit in the Mexican case was financed by foreign investment and not by savings as recommended by traditional economists such as Solow or Krugman.

Unfortunately, the central Mexican government has not provided any money to assist regions with unidentified competitive advantages, like in the case of Chiapas.

Recently, in order to avoid more guerrilla activity, the government has increased the amount of capital transferences to Chiapas to build motorways and roads as an attempt to “connect” the state with other regions and to give it the opportunity to compete in national and international markets. The problem has been the lack of products and even services that can be taken out and put into other markets. Chiapas is not the only “loser”, Guerrero and Oaxaca, also both Southern states, share the same problems: low formal employment, agricultural-oriented economies without integration, and isolation from the rest of the rich parts of Mexico.

In an article in “The economist” (2000), it was argued that the most notable characteristic of economic development in Mexico is the disparity between the rich and the poor cities. In the former ones, opportunities for making money abound and in the latter ones, poverty is the rule. Chiapas, Guerrero and Oaxaca are all examples of regions characterised by poor cities.

At state and urban level there are many interesting examples of application of neoclassical theory. For instance, the state of Nuevo Leon in Mexico, has been developing what is known as “Free hands projects” aimed to reduce its participation in industrial activity. The projects focus on how to reduce the number of procedures to create companies as well as how to help international companies to select the best places within the state to locate their facilities. Cities are paying for projects that can help to create better business climates. Cordoba City is a good example of such a neoclassical approach because it is working to establish a “thermometer” to measure the business atmosphere aiming to provide authorities with information on the simplification of business establishment procedures.

To sum up, most of the authorities at all levels, are working to reduce the bureaucracy level and their participation in the local industrial activities. In many parts of the country, the number of papers to be completed as a requisite to create a new company is so high that many people prefer to work in the black market or simply not to become an entrepreneur at all.



*Economic base theory*

Determinants of economic growth are directly related to the demand for goods and services and products from other areas outside the regional economic boundaries of a place. The growth of industries that used regional resources, including labour and materials for final exports elsewhere, will generate both local wealth and jobs.

This model is useful in determining the balance between types and sectors a city needs to develop economic stability. Emphasis is given to support companies supplying national and international markets. Moreover, authorities, if they want to produce development, must provide aid to these companies in the form of better transportation systems, infrastructure and all those mechanisms that will enhance the competitive position of these kind of companies.

The states of the central belt of Mexico seem to follow strategies linked to this theory. State and municipal authorities of the state of San Luis Potosi, located at the geographical centre of the country, have been working to generate economic development through supporting large and traditional companies with large market participation. Local government altered in this state its strategy to grant economic incentives to companies looking for larger markets. Construction of ad-hoc rail tracks, power plants and roads to transport products are amongst the prizes for those companies willing to compete more aggressively in national markets.

Other states have concentrated their efforts to complete clusters of industries with high export potential. The idea of “specialized states” arose from the central government during the regime of the president Carlos Salinas (1988-1994) as a palliative to avoid excessive competence among states with almost the same industrial base. Therefore, some regions producing leather specialized in shoe production (Leon city, in the state of Guanajuato) while other specialized in leather furniture because timber companies formed a natural supportive cluster for this industry (Cuernavaca city in the state of Morelos). Money was granted to companies willing to work within the cluster, but there were negative consequences. Small companies who did not obtain any grant from the government faced more competition and disappeared. The unemployment rate of some small cities soared because companies that obtained

grants were not big enough to assimilate the labour force left by companies forced to close. In this case, regional economic growth occurs but no development.

### *Location theory*

Regions and cities must assess the relative value of their locational factors with the other resources they possess. Attracting new companies and business produces a virtuous circle where more companies attract more companies, generating employment and developing the competitive nature of the place. It was assumed that the best place to locate any economic activity was in “the cheapest transport link between raw material and the markets” (Blackely, 1989; p.63). Thanks to new technological patterns and systems, this is not necessarily true anymore.

Systematic studies and research of “factors” to select a “place” for locating a company were first carried out in the 1940s, 1950s and the first half of the 1960s. These studies focused on the importance of taxes and incentives in industrial location processes. A more recent review of influential “variables” in location decisions was given by Blair and Premus (1987), who revised Kieschnick (1981), Premus (1982) and Schmenner (1987) aiming to discover the main factors related to location decisions in specific industries. Each of these studies systematically looked for specific patterns (to identify factors or variables) which companies took to locate in regions, trying to find out if the investors really compared cities when locating facilities.

These so-called “factors” must be assessed by cities and regions when analysing the ways in which they are considered in the investment market. Economic development can only be achieved if authorities improve their location factors. In this way, new companies will create more jobs, less unemployment means more purchase capacity, and so on. For the proponents of this theory, this is the only way to develop a place.

The Northern part of Mexico and specifically the border cities fall into this theory. The “maquiladora program” highlighted amongst U.S.A investors the advantages of these northern cities, such as geographical proximity to the U.S.A., availability of labour, good transportation systems connecting with many cities in the U.S.A. and the possibility that American managers could continue to live in America and working in

Mexico where cheaper labour costs would make their companies more competitive in the international arena.

Under this strategy, cities like Tijuana, Ciudad Juarez, Nuevo Laredo and Reynosa, to name but a few, flourished and even today are considered growth-poles for the northern states of Mexico and for the country itself. Indeed, Tijuana has also exploited its geographical position with Japanese companies, as a bridge to the American market, taking advantage of the North America Free Trade Agreement benefits.

### *Central place theory*

Christaller could be considered as the founder of central place theory. He argues that there is a hierarchy of places. Each urban centre is supported by a series of smaller places that provide resources required by a central clearinghouse to fill into the world market place (Christaller, 1933)

Regional development models have relied on this theory to explain the allocation of resources. It is assumed that developing a central place or city of larger-scale population would lead to economic improvement of the whole region (Hudson, 1995).

In the 1970s, rural Mexican states, such as Chiapas, Oaxaca and Guerrero implemented programmes to develop one central city within each state with the idea that the economic prosperity of the place would permeate to the rest of the state (in two cases the capital of the regional state and in the other one a beach area). According to the Secretaria de Desarrollo Social (Ministry of Social Development) most of the projects were successful, but some of the consequences included a high rate of migration to these central places and the concentration of economic activity both in one place and few people.

Due to technology improvements in telecommunications, better transportation systems and the lack of real spillovers to the whole region, this theory does not have many followers at the moment in Mexico (Hanson, 1998). It has been demonstrated, for example, that a clearinghouse does not have to be in the geographical centre of the region. Telecommunications have facilitated transfer processes giving way to other kinds of hierarchies where geography is not relevant (Gaspar and Glasser, 1998).



Moreover, the existing hierarchy of the cities can be transformed as in the case of the central belt of Scotland, where small dormitory towns were redesigned as a telecommunications cluster. The effect in the hierarchy is that now second level towns have grouped together creating a new central place with a new redistribution of activities and people in the geographical space.

### *Attraction models*

Communities and regions can alter their position in the market of places for locating businesses by offering incentives and subsidies. The thesis is that any money given away will be recouped through taxation by the subsequent increase in economic activity and the consequent economic wealth. The conception is that communities can be sold as products to investors (customers). Therefore, promoting a place in terms of its labour force, availability of land or taking advantage of agglomeration economies to attract companies in one industry, are amongst the most used strategies to bring companies to cities (Keating, 1995).

Recent trends focus more on attracting entrepreneurial population than in attracting companies. The rationale states that entrepreneurs are committed to a region and it would be more difficult for them to relocate in other place in the future, while for traditional investors relocation is always a possible alternative (Keating, 1995). This theory seems to be the most used theory in Mexico recently by any city or state to promote themselves among international and national investors. Also, academically, there is a trend towards defining what is meant by “the attractiveness of a place”. Moreover, efforts to rank the most and the less attractive cities for industrial investment in some countries have appeared in recent years (Centro de Estudios Estrategicos, 1998, 1999).

Most of the industrial cities in Mexico (like Monterrey, Guadalajara, Queretaro, San Luis, among others) have developed promotion plans to attract foreign investment. The central government is backing these strategies in order to give more autonomy to city governments. Also, it is assumed that cities know more what resources they have and how to promote them. The aim is to generate development more than employment. As a matter of fact, the most economically developed cities (Monterrey and Guadalajara) are looking for special companies such as those in the technology

sector, research and development centres, headquarters, to name but a few examples. Their promotion efforts are selective in order to attract those companies that could complete some of the traditional clusters already producing in these cities. For other cities, most of them located in the south, the aim is simple, to attract any kind of economic activity to create employment.

As can be seen, Mexico is a mixed economy, where there is in practice a combination of theories aimed to improve the economic situation of the country. The freedom of choice in city and state authorities to implement economic strategies is still reduced because they control only 20% of the total taxation. Due to this, there is little room for designing incentives or grants to enhance the economic base of such cities.

### **1.8 The case of cumulative causation theory and its implications for economic development and growth**

Cumulative causation theory is the base for development economics. Different important models and theorists arose from this line of thought, among the most important are Myrdal, Kaldor, Young, Hirschman and Rosenstein-Rodan. Due to the fact that this thesis deals with the concept of economic development and that cumulative causation theory explains from various perspectives the way countries and regions can improve their level of economic development, it is required to dedicate some space to cumulative causation theory as a general framework. Modern models of country and urban economic development are still sustained by concepts (such as balanced or unbalanced growth, backward linkages, just to name but a few) originated by these economists.

It is relevant to mention at this point that cumulative causation has its roots in the manufacturing sector because of its pervasive effects and its technology dependence. This sector of the economy requires inputs for production and its linkages with other sectors make it the core of the economic analysis. Even when recent economic theory could argue that the same effect could be perceptible in the service sector, it is still difficult to quantify it (Rauch, 1994).

Cumulative causation theory (henceforth known as CCT) is based on the Marshallian concept (1920) of “increasing returns”. It was argued by Marshall that increased



mechanization will lead to industry specialization across companies and a higher output and a bigger division of labour are natural results. In modern economic theory this is known as scale economies (Thirlwall, 1999).

“Cumulative causation theory focuses on production, emphasizes the unique feature of manufacturing in being subject to increasing returns, regards technological change as largely endogenous, identifies capital accumulation as the key element in growth and the never-ending search for new markets as the driving force in capitalist economies” (Toner 1999, p. 29).

Indeed, the interplay of market forces increases rather than decreases the inequality between regions (Blackely, 1989). Market forces, pull capital, skill and expertise to certain areas. As consequence, these areas accumulate more elements for their competitive advantage over the rest of the regions. The predictable consequence is divergence in income between regions and inequalities. Differences among regions or countries are explained by increasing returns and labour division rather than agglomeration economies, at least at the first approach (Fujita and Thisse, 2000).

Thus, places performing economically well will tend to do so in the future because these places attract firms and people. However, it is assumed that firms will have a better market position due to their access to a larger and better labour pool. This will lead to pay higher salaries because there are more companies “fighting” for the same skilled employees. Then employees would earn more money to spend in the economy. This growth circle is best known as the “virtuous circle” and assumes that there is an increase in the production per worker (productivity), labour division and that workers have free movement (Becker and Henderson, 2000).

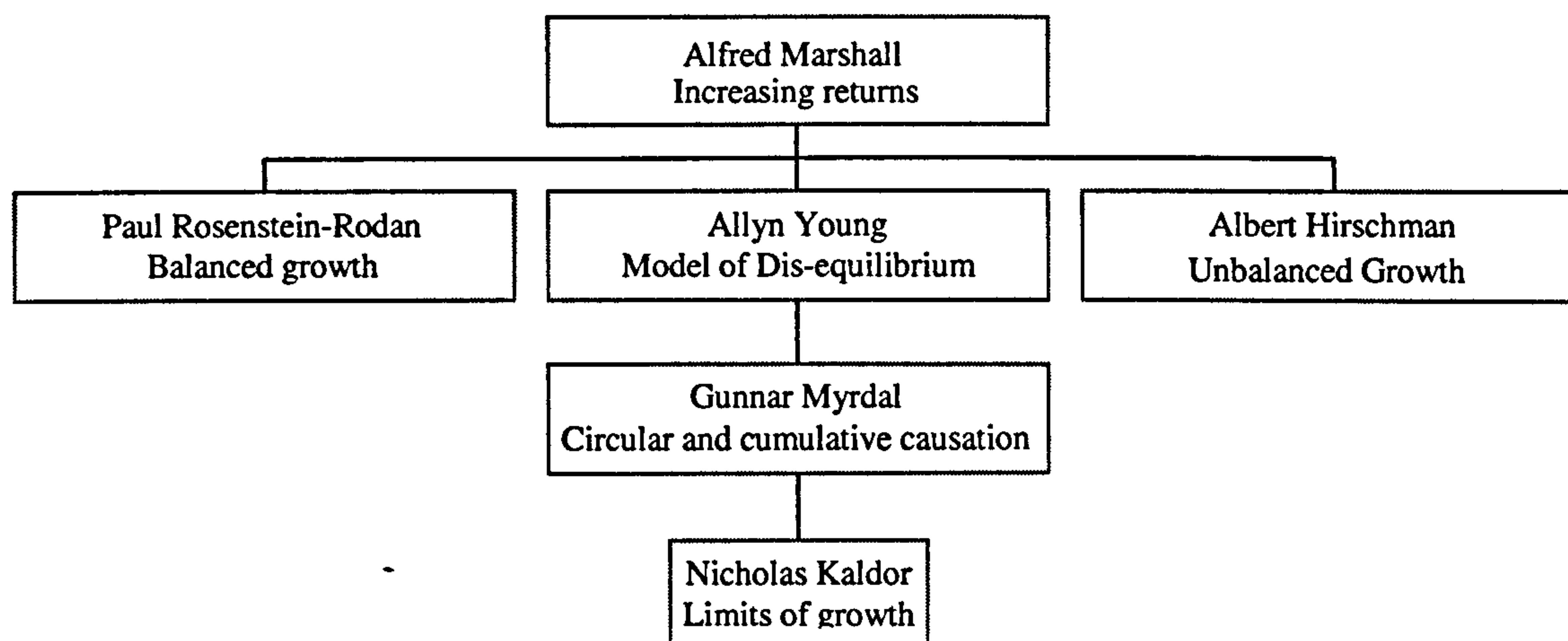
CCT argues that there is a “...circular relation between growth in productivity and growth in total output. The growth in output causes growth in productivity and the growth in productivity stimulates growth in the total output” (pp.162). Growth in productivity and growth in the total output are interrelated and “self-reinforcing” (Toner 1999, p.162).

One of the most important points of CCT theory is its capacity to predict uneven development levels among and inside countries. The processes of cumulative growth and decline among countries and regions are more relevant and permeable than trends towards equilibrium. It is argued that the analysis and modelling of growth and development must be interrelated with historical, social, cultural, institutional and political factors (Toner, 1999).

Krugman (1996) summarizes this economic approach to underdevelopment problems sustaining “development is a virtuous circle driven by external economies” (p.1). He added that under this perspective, countries are underdeveloped because they are unable to maintain the virtuous circle which in the long term produces a positive feedback, in which governments have a high participation level. He concluded, governments are responsible for breaking negative circles and institutions are central to development processes. The recognition that market economies do not operate isolated from institutions is central to the approach of CC theory.

The evolution of the cumulative causation approach to growth and development has been a dynamic process. Due to the nature of the present research, just some the most relevant authors and their theories will be presented here in a chronological order of appearance of their work, thus presenting their contributions to the modern concepts of economic development and growth upon which part of this thesis is built. Figure 1.1 shows the names of the economists to be covered in this section as well as the sequence of presentation.

It is important to mention that CCT provides an insight of what is to be, for the purpose of this research, the difference between growth and development. It is assumed that development implies a structural change while growth implies an increase in the total output. Cumulative causation theorists add models of development must include other “non economic” variables, like social and cultural ones (Myrdal, 1958).

**Figure 1.1****Main representatives of the cumulative causation school**

It can be noticed from figure 1.1 that Marshall is included even though he does not belong to the CC school. However, his concept of increasing returns provides one of the central elements for the great controversy in development economics and the starting point for CC. All the other economists presented in the table drew on this concept.

### 1.8.1 Allyn Young's concept of economic progress

Young's studies about economic progress drew on Marshall's theory of increasing returns operating at inter-industry level. He rejected the notion of competitive equilibrium, without rejecting the idea of competition, and assumed that demand and supply are not independent of each other. Moreover, he argued supply affects demand and vice versa. Central to this notion is his approach to prices, that areas are affected by increasing returns in two ways, lower prices or more quantities available. He sustained that factor utilization and factor proportions in production are not a function of relative factor prices. He concluded that market size is the most efficient factor to allocate proportions in production (Young, 1928).

Young's most relevant piece of research "Increasing returns and economic progress" (1928) presents his conception on how gains in the ratio capital-labour lead to economic progress. He gave dynamism to the fact economic systems are always in



processes of inter-exchange and reciprocal demand it is a perfect illustration of this point. Young argued that an increase in the supply of one commodity leads to an increase demand for other commodities, “enlarging of the market for any one commodity produced under conditions of increasing returns generally has the net effect...of enlarging the market for other commodities”. He added that growth across industries is uneven due to different demand elasticity for their products.

One of the main contributions of Young to development economics was his input-output analysis as a conception of an economy. His emphasis was on the discovering of those intermediate products and their industries, in an economy, producing a cascade down to other industries (in the form of contracts, sub-leasing, etc.), leading to the consequent economic growth. According to his perception, any alteration of the industrial organization has effects elsewhere, rejecting clearly the notion of *ceteris paribus* as an economic analysis tool proposed by Marshall (Young, 1928).

Finally, Young was an advocate of state participation to impulse growth. His view was that governments must manage the increasing returns in the industry and permeate them to other sectors of the economy to accelerate growth. Nevertheless, he was conscious about the pace of change in some of the main economic factors, recognizing that the benefits of capital accumulation and exploiting economies of agglomeration are slower than training the labour force.

### **1.8.2 Rosenstein-Rodan: Balanced growth**

For Rosenstein-Rodan the growth process was naturally unbalanced and the solution to underdevelopment is to balance it through government participation in the industrial organization. Disequilibrium is the common denominator in a development process due to the inefficiency of the market mechanisms determining the optimum production level and the composition of investment. Balance growth theory argues that the interaction among industries is most of the time complementary. But in underdeveloped regions, the constraint of factor supply ensures that the interaction is for the most part under competitive circumstances.

Rosenstein-Rodan introduced the concept of “risk” as a component of investment decisions influencing growth patterns. His argument is that most of the



underdeveloped regions have a small market size. Under these conditions, the investment required to achieve a demand level enough to produce increasing returns is so high that entrepreneurs make their investments in stages in order not to produce a negative effect in the aggregate total output. He went on to state that governments must intervene in order to reduce the perceived risk, to co-ordinate the volume and industry composition as a form of maximizing the utility of investment and leading to a development process (Rauch, 1994).

Another important point proposed by Rosenstein-Rodan is the difference made between the increasing returns of the firm and the plant, arguing that manufacturing plants do not have increasing returns, but the firm does. The contention is that firms, understood as a chain of processes, are able to produce savings when they use the same inputs to produce more output due to a greater demand. At the same time, plants do not see any real gain because gains are reflected in the capital as a whole. This means that even when the plant is able to reach scale economies, the real savings will be seen at firm level. It is likely that while one part of the process is achieving a better efficiency level, some other part of it could face transformation problems or a greater slope in the learning curve (Rauch, 1994).

On the demand side, his proposition argues that underdeveloped regions face low levels of per capita income, and due to this, “demand for most goods is highly inelastic, since demand is directed solely to a small variety of basic goods wage” (Toner, 1999; p.67). He adds that markets in underdeveloped regions have more imperfections than developed ones. As consequence two major imperfections arise: risk and a divergence between private and social marginal net product producing a vicious circle and no increasing returns.

### **1.8.3 Albert Hirschman: Unbalanced growth**

“The strategy of economic development” (1958) is the most known work of Hirschman. He argued that the lack of elasticity of factor supply may fetter growth and therefore it has to be included explicitly in country development plans. He concentrated in the investment criteria as a way to reduce the inelasticity of factor supply by backward linkage to the capital and the intermediate good sector (Hirschman, 1958).

Hirschman rejected the concepts of balanced growth due to:

1. Underdeveloped regions possess the resources to generate many consumer goods and industries capable of achieving economies of large-scale production.
2. Genuine decision making is scarce in underdeveloped economies. He added that the balanced growth model is based on extensive state participation, which entails the raising of private capital and controlling the volume, composition and timing of investments. Consequently government is in charge of such decisions and entrepreneurs are reduced to economic performers.
3. Balanced growth does not occur in the real world, according to Hirschman (1958). He sustained that economists confuse the description of an outcome with the cause of growth when they are examining an economy in two different points in time.
4. Development is a slow process, which takes many decades characterized by ups and downs in the whole economy. Supporting this argument is the fact economic interactions in one economy are so complex that is very difficult to understand all of them at a time.
5. Hirschman denies the fact externalities are the foundation of growth, because balanced growth strategy uses the whole of these externalities and does not give more incentives to accumulate investment.

While Young focused on economic externalities, Hirschman believed that the internal production pace is responsible for growth and thus, it is imperative to put more resources and provide more incentives to production in all industries.

#### **1.8.4 Gunnar Myrdal: Circular and cumulative causation**

Myrdal was the first economist to mention the term “circular causation of a cumulative process” (Myrdal, 1957, pp. 32). He introduced some innovations in the development of theory explaining the growth process. Firstly, he applied the concept to both developed and underdeveloped regions. The second innovation was the incorporation of trade, capital flows and migration amongst rich and poor regions as a reason for underdevelopment. The third point added by Myrdal was to give equal importance to economic and non-economic factors in the explanation of growth. He assured that equilibrium in economics is not existent because it assumes there are always forces acting, in the event of de-stabilization, to change the system to the

original stage. In reality, these changes can take longer than the population can bear, giving reason for state intervention (Myrdal, 1957).

As with Hirschman, Myrdal argued that the lack of competitiveness of domestic manufactures reinforces the trend of various underdeveloped countries to specialize in commodities. Unfortunately this specialization shall not lead to economic progress and a manufacturing competitive base is not to be generated. Commodities do not produce large increasing returns (Myrdal, 1957).

Myrdal claimed that economic and non-economic factors reinforce each other and increase the possibility of any economic system to become developed or underdeveloped. The selection and relevance assigned to particular non-economic factors and their interaction with economic factors are entirely contingent on the particular circumstances under analysis (Thirlwall, 1999).

In conclusion, Myrdal contributed three important elements to CC theory. Firstly, CC theory is applicable either to underdeveloped or developed regions. Secondly trade, capital flows and migration can lead to vicious or virtuous economic circles. Finally, he gave the same importance to economic and non-economic factors in the explanation of growth and decline.

#### **1.8.5 Nicholas Kaldor: combining approaches**

For Kaldor, the economic system is able to generate increasing returns, endogenous technological change, factor creation and complementarity in production and consumption. His starting point was that economic systems are in disequilibrium and consequently the search of growth is not a set of linear effects (Kaldor, 1967).

“Learning by using” was established as a condition for generating increasing returns. The way growth is generated depends on the ability of workers and companies to use the resources available in the best possible way. The central notion for economic growth in Kaldor’s theory is that increasing returns can be gained by increasing productivity through technological progress. As a consequence, capital gains will be reinvested in more capacity reinforcing the virtuous circle. Capital accumulation will lead to economic growth.



One of the most important contributions of Kaldor is his notion of “complementarity”. He accepted that the rate at which an industry grows depends on the rate, at which other industries grow, but having these industries different demand elasticities, the rate of growth vary among them, and as a result some will grow faster than the others. Complementarity is more important than substitution and concluded that this “...emphasis in substitution is what makes pure equilibrium economics so lifeless” (Kaldor, 1967, p.348).

Kaldor incorporated three key Keynesian factors into the CC theory; the role of money in the growth of regions, entrepreneurial expectations and induced investment. Cowan and Rizzo (1996) argued that this was an attempt to conceal two time perspectives, the long term view of Young about increasing returns and the short term explanations for fluctuation in any given economy. Indeed, Kaldor was not in favour of state intervention for reducing economic shocks. He sustained the inventory management ability of merchants can reduce price instability for manufacturing and even commodities. This is relevant because price stability implies that the answer to changes in demand is composed by quantity adjustments and that the answer to an increase in demand will be more investment in capacity.

To sum up Kaldor’s perspective about development it is necessary to mention his three laws explaining the main determinants of growth:

1. The first law sustains that there is a strong positive causal relation between the rate of growth and manufacturing output.
2. There is a strong positive causal relation between the rate of growth of manufacturing output and the rate of growth of manufacturing productivity.
3. Aggregate productivity is positively associated with the growth of employment in manufacturing and negatively associated with the growth of non-manufacturing employment.

### **1.8.6 Concluding remarks about cumulative causation**

So much can be said about the contribution of these economists to the theory of economic development and growth, but that is outside the scope of this research. The objective of this brief presentation was to provide a framework to justify a economic development model, making clear the difference that since the moment “non-



economic factors” are included, we are making a strong difference between growth and development, from a cumulative causation perspective.

The lack of any criticism about each of the contributions obeys neither to the lack of analytical thinking nor to an intention to say that all these proposals are “perfect”. The fundamental reason is that such deployment would necessarily include more theories than the ones revised here and as a consequence, the original scope of this research would be lost.

### **1.9 Time variables and their role in economic development**

Time is taken for granted in recent economic development research and is not considered in traditional econometric model. The aim of this section is just to point out that time plays an important role in economic development processes, where expected outcomes and plans are changed by time variables.

The literature on time and social theory is well rehearsed elsewhere (Hassard, 1990; Adam, 1990, 1995, 1998; Baert, 1992; Elias, 1992). Despite talk of a temporal turn (Adam, 1995) time was treated as an important subject of study in recent attempts to design more sophisticated economic models until recently. Myrdal (1958) included in his “principles of circular and cumulative causation” time as a relevant factor for development:

“The time element is of paramount importance as the effects of a shock on different variables of the system will be spread very differently along the time axis. A rise in employment, for instance, will almost immediately raise some levels of living, but a change in levels of education or health are achieved more slowly, and its effects on the other factors are delayed, so that there is a lag in the whole process of cummulation” (Myrdal 1958, p.18)

But a question has to be posed and logically is what does time mean? Table 1.1 provides the main time concepts immerse in social sciences.

The importance of the table relies not in its time definitions but rather the fact they are mutually implicated with each other. Adams (1998) argues these definitions are not a

taxonomy but a synthesis to be used to improve models and analysis, where the purpose is to make time visible in everyday life and consequently in any social theory.

Time in real terms is not neutral in economics. It determines the performance of economies and models at the same time (ironically). Econometric models are unable to integrate “random shocks” due to the nature of such events. Bartick and Bingham (1997) argued that this must not be a reason to explain the failure or inability of a model to portray economic events, but they also argue that this randomness is far away from being capture in models of urban economic development.

**Table 1.1**  
**Time concepts and their definitions**

<b>Time concept</b>	<b>Definition</b>
<i>Time</i>	Frames and parameters within which social action occurs. Clock and calendar provide a necessary universal grid in advance societies. Example: 3:45 pm, 6:25 am, July 25 <sup>th</sup> 2000, August 16 <sup>th</sup> 2002.
<i>Timing</i>	Good or bad times for action. Depend on a wide variety of factors and perceptions. Example: Buying stock before it crashes (speculation), and in general all the “good times” for this or that, like nowadays it is a “good time” for buying a house.
<i>Temporality</i>	Cycles of change embedded in time. Focuses on process rather than event. Change and cycles are unidirectional. Example: Spring, Summer, Autumn, Winter. The product life cycle.
<i>Tempo</i>	The pace at which people experience the passing of time. Rates of action and reaction. Example: 2 hours at the cinema watching a good film “seem” to pass faster than 2 hours in a cramped seat in flight. In a sports game, time seems to pass faster for the team which is losing than for the one winning.

It should be remembered that any patterns of social activity occur in time and it is only when they are examined over time that they form patterns. In the case of this research, to find out these patters influencing the economic development of some Mexican cities is the most relevant point.

### **1.10 Incentives for economic development: a fallacy?**

In the literature of economic development and in some cases economic growth, the concept of “incentive” arises immediately. Local governments have based their search

for a positive development path on providing incentives to businesses with the sole idea of generating more jobs. Another objective searched has been to increase the potential output or the technology base in order to reach higher productivity rate and therefore higher salaries (Feiock, 2002).

Conflicting perspectives are common when scholars study the benefits of direct incentives to companies. On one hand, the advocates of economic development incentives argue that this is the only way to attract businesses to depressed regions otherwise businesses have no incentives to locate in there. Opponents argue that incentives are a waste of public resources since there is not a rational allocation of resources. What is more, they go on, the fight for attracting companies has created a “market” of cities offering highly expensive incentives to companies that usually will not create any spillover to the community city (Lewis, 2002).

It is important to mention the main incentives for development traditionally granted by local governments:

1. Tax breaks for a period of time.
2. Free land.
3. Free industrial infrastructure (warehouses, fuel, electricity plants, ad-hoc roads, railways, etc.).
4. Training for employees.
5. Social housing in the company's nearby area.
6. Subsidies to buy raw material.
7. Special union agreements
8. Loans at low interest rate.
9. Preferential access to ports.

The list is not exhaustive but aims to cover most of the traditional benefits received by businesses all over the world. However, all listed benefits represent a cost saving for companies. The idea of incentives is both to increase the profits and to reduce the total costs that supposedly could not be achieved in any other way.

Feiock (2002) argues that the excessive supply of cities offering incentives, as in any other economic process, has led to inflation and ferocious competition. The former is



forcing cities (or local governments) to offer incentives above any economic rationality in order to create new jobs where the money invested is not offset in any means. The latter is creating a quasi-market of economic development incentives where companies obtain more benefit from it than from the selling of their products and services. At the end, the tax payer is the real loser. It seems that the criterion for assigning incentives is driven by political motives rather than by economic rationality in the administration of resources.

The debate still exists because there is evidence in both directions showing good and bad stories among cities. Also there is no pattern to determine when and what incentives will work for any given city.

### **1.11 Competitiveness and attractiveness as core concepts in economic development**

Competitiveness and attractiveness are concepts relevant to economic development and growth issues because they are strongly related to the way cities manage their strategies in order to improve the “wealth” of their inhabitants (Anderson, 1999; Kresl and Singh, 1999). For example, highly attractive and competitive cities induce immigration because they are seen as places providing opportunities. In the same way, cities perceived as unattractive are prone to low inward investment due to their “lack” of resources to help both people and organizations to perform economic activities successfully.

The concept of competitiveness has become fashionable among practitioners and academics and it is very well defined empirically in terms of variables in many econometric models (Lever, 1999; Kresl and Singh, 1999; and Cheshire, 1999). On the other hand, attractiveness is well defined theoretically, but there is still a lack of literature regarding econometric models need to portray the concept. However, there have been some attempts to model attractiveness (Andersson, 1999) and to demonstrate that there is a difference between competitiveness and attractiveness (Serrano, 2000).

Lever and Turok (1999) define competitiveness in terms of cities' capacity to produce goods and services for national or international markets providing higher incomes and



thus improving the quality of life of the citizens. In their definition they add that competitiveness must promote “sustainable development”. This contention provides a clear justification to incorporate competitive variables into econometric models to test for their impact on the economic performance of cities, where the outcome is a measure of development.

Andersson (1999) defines city attractiveness as all the elements that characterize a city in which to live and to produce goods and services with a proper image not attributable to any other place. These “elements” include streets, parks and recreation centres, industrial areas and the people living in the city.

Competitiveness and attractiveness play an important role in the development of countries, regions and cities (Anderson, 1999; Kresl and Singh, 1999). The “new” trend is to promote cities at international level in order to attract capital to generate employment and thus to improve the quality of life of the population. For Andersson (1999), making the city attractive represents the first stage in the generation of a positive economic development cycle.

Chapters 3 and 4 shall present a deeper discussion about these concepts and their interaction in the process of economic development, including a justification of why they should represent development and not growth.

## **1.12 Conclusions**

The main objective of this chapter has been to introduce the concepts of economic development and economic growth as processes leading to improve the quality of life of any population. It was demonstrated that development and growth are not the same, even though some literature conflates these concepts. It was concluded, according to the literature survey carried out here, that growth is a stage in the process of economic development.

The implications of economic development in the new paradigm of the city, where local authorities have more “power” to make decisions in relation to strategies and projects to generate economic development. Thus, the emphasis is placed in “cities” as units of analysis.

For the purpose of this research, Mexico will provide the sample of cities but rather than to the country, the modelling process will be applied to a set of cities. Nevertheless, cities are influenced by central policies regarding economic development and they are also influenced by other's regions policies, making difficult and almost impossible to "isolate" them from the national policy framework and of course, from its effects.

Central government in Mexico has allocated economic resources and implemented strategies to improve the quality of life conditions all over the country. In the search for "improvement" most of the relevant theories of economic development have been implemented, like central place theory, location theory or the neoclassical theory. This fact provides an interesting starting point to carry out an academic research linked to the point that recent data will be available in June 2000 at city level from Mexican 2000 census, making comparisons along time possible.

"Time" plays an important role in economic development decisions and models. Some of its effects were referenced and its main variables defined such as tempo, temporality and timing. This research does not intend to realize a philosophical discussion about time concepts, but rather to use them as a source of "noise" which can produce several possible scenarios for the same combinations of factors and variables.

Finally, the chapter introduced the concepts of competitiveness and attractiveness and their relation with urban economic development. These concepts will be treated deeply in further sections. They are considered the core and the reason of the current thesis.

# Chapter 2

## Main issues in urban economic development: a review

### Introduction

The aim of this chapter is to present a literature review about the main issues in urban economic development. Theory will focus on both the traditional and new concepts of economic development while the praxis will emphasize the Mexican context where possible, reviewing also some of the policies that have been applied in some cities and how they worked.

### 2.1 The socio-economic context and the need for urban economic development

The study of urban economic development has really started in the middle of the 1980's as an independent discipline (Bingham and Blair, 1984; Blair, 1995; Blakely, 1989). Originally, the concept had its origins at national level when the discrepancies of growth rates between developed and developing countries were of concern among academics. At this time, the theoretical difference between growth and development relied on the social content of the latter according to the experts (Blakely, 1989; Malecki, 1997). At this time the question was how to increase the well being of citizens? As it can be inferred from the question, it was not just the "economic aspect" the relevant one, there were other components interacting at the same time with the economy of a country like social and political aspects. Thus, the notion of equilibrium was the core of analysis, where equilibrium was understood not just as economic indicators but also as social and political ones, even including the environment.

Urban economic development deals with the economic, social, political and environmental conditions of cities or urban areas and how they perform within a country. Implicitly not all cities have the same economic growth or the same social and political activity. As proof of the argument, observe the participation of people in local or state elections, the number of deprived people living in a particular city or also the period of time the same party has been ruling in a particular place (in the case of Mexico), to name but a few.



Cities in Mexico have different levels of development and consequently of uneven economic, social and political conditions. Urban economic initiatives look for strategies to diminish unevenness among cities. Large cities are attractive for people because they offer more opportunities and better salaries and wages (Malecki, 1997). Then, people from other places (immigrants) come to these cities putting pressure on local services through the demand of potable water, electricity or housing. Immigration puts pressure on salaries through an oversupply of labour, driving down salaries. However, local authorities sometimes do not have plans to cope with large scale immigration producing an undesirable outcome: unofficial settlements, where people live with no basic services such as electricity, sewerage or even potable water (Wolman and Spitzley, 1996), and with no legal title to the land.

### **Economic decline**

In developed countries, some cities are experiencing an economic decline where the loss of jobs is the main characteristic. Knight and Gappert (1984) contended that local authorities face the challenge of supporting companies with a low competitive level or in a dying industry just to keep employment. However, in developing countries, they add, the economic decline has other reasons such as a lack of security in a city, appropriate skills and abilities of the population, inadequate technological support or problems in the supply of raw materials.

Also, globalisation is adding up more pressure on local governments in the form of competition for investment. Global companies looking for a place for a new branch or for an extension want to have all the possible advantages: tax-free incentives, large pools of labour, land for free and even economic support from national and local governments to set up their assets. Governments succumbing to the temptation pay a high price for the employment generated since that money could be spent in other needs of the population.

Malizia and Feser (1999) found out three reasons to explain economic decline in terms of the city's life cycle:

1. Due to lack of resources, central governments decide to support some places, attributable in most cases to political or social pressure, at the expense of others since economic resources are tight. Some national governments have chosen to



deindustrialise because they envisage the service sector as the panacea to solve all the economic problems.

2. Industries “are born and die” continually, in part due to technological changes and profits they make. At the beginning of the twentieth century, agriculture was the core activity in developed countries, now it is the service sector.
3. Companies have less space to protect their information, information technology brings about an “open world” where capital moves all over the world.

Cities must provide “certainty” to help firms to establish long term plans and to minimise the risk in investment and in the ratio profits/revenue. Places where social disruption, political instability or lack security do not provide guarantees that the firm’s operations, leading to an economic decline (Blackman, 1995). In the case of Mexico, the theory portrays the current situation in cities like Tijuana (the highest number of kidnappings in the last four years), Ciudad Juarez (drug cartels and killings) and San Cristobal de Las Casas in Chiapas, where the guerrilla group “zapatistas” have their base. All these cities have something in common; they are losing companies. Tijuana and Ciudad Juarez ten years ago were highly attractive places for industry, the maquiladoras were producing with excellent quality standards. The reality today is that investors do not want to be there, they are afraid of being kidnapped. This fact supports the findings of Knight and Gappert (1989) regarding the reasons to explain economic decline in some cities in developing countries.

### **Structural shifts (sectoral, organizational)**

Companies observe rational principles hence they look for places where their costs are minimized in proportion to revenues. This behaviour has led some cities to have a large number of companies with a consequent high employment rate, good salaries and the well-known benefits of the new industrial cities. On the other hand, this concentration of economic activities has brought about more “poor” cities, where there is almost no economic activity at all (Wolman and Spitzley, 1996). The consequences include high unemployment rates, crime and robbery.

There has been a shift from “low competitive cities” to those offering competitive benefits, ranging from tax exemptions, large pools of workers to money grants by medium and large corporations. The core idea is to take advantage of all the

“incentives” given by local and regional authorities to carry out operations. Thus, companies are playing the new game named “location-relocation” where the main actors are local authorities and investors (Lovering, 1999). The formers are trying to keep or increase the labour base and the indicators of “good performance” for election purposes, while the latter look for the best incentive package in order to maximize their profits and to reduce the risk to a minimum level.

Such company movement has produced two facts in most countries all over the world. The first one, cities have come into a fight for capital, at national or international level. The outcome has been that some cities are losing jobs and some others are gaining them. The second is the redistribution and restructuring of economic activities. Industrial cities are attracting more service-oriented companies in order to diversify the “risk” of having just one kind of industry. The price paid is running-down economies, more deprivation in the inner cities, social polarization and so on. Cities like Glasgow, Manchester and Liverpool can be used to exemplify the argument about industrial diversification. Glasgow used to be a heavy industry hub and now tourism retailing and financial services are as important as manufacturing.

The Mexican economy is experiencing various structural changes mainly due to two reasons: the NAFTA and the disappearance of “old fashion” industries like mining and all those depending on natural resources.

NAFTA rules have transformed the strategies of the old traditional American assembly companies (known as “maquiladoras”) operating in Mexico and the new ones with a more value added orientation. The new NAFTA conditions established that the assembly companies can now sell part of their production in Mexican territory starting with only a 10% in the year 2000 but increasing gradually until a 100% of the total output in the year 2010. With these new “selling” conditions companies are reshaping their marketing strategy because these rules have increased the prospective market for their products, Mexican consumers have access to them without paying the costs of transport for moving products back to the U.S.A. and then bring them again to Mexico as was the case in the past.

Traditionally the “maquiladora” locates in the border Mexican states because in this way it can obtain many benefits such as a large pool and cheap labour force, American executives can live in the U.S.A. and work in Mexico traveling no more than 20 minutes from their homes, raw material can arrive without problems and risks from American factories, good infrastructure connecting border cities amongst others (Hanson, 1998). To illustrate this table 2.1 provides evidence of state participation in the “maquiladora” activities.

**Table 2.1: State participation in the Mexican maquiladora activity**

State	Millions of dollars	Participation %
Total exports maquiladoras	20,371.0	100
Baja California	4,048.6	19.9
Chihuahua	3,950.7	19.4
Tamaulipas	2,994.2	14.5
Sonora	1293.0	6.3
Coahuila	1,010.1	5.0
Other states not in the border	7,123.9	35.0

Source: SECOFI, Sicmex, 1999. Data cover the period January-May, 1998.

It can be seen from the table and in the following map that all the most important places for the maquiladora are the border states, and the participation of the rest is just marginal. However, this condition is now changing. The new rules have produced a displacement of these companies to the core cities of Mexico: Mexico City, Monterrey and Guadalajara, where about the 33% of the Mexican population lives.

Industries requiring natural resources tended to move out from Mexican territory. Reasons are tight rules and green area protection among others. The case of the paper industry is a good example of how environmental procedures are changing the way traditional companies carry out their operations. Thus, paper companies are now more focused on recycling than in cutting trees. These “emerging industries” (mainly those dedicated to recycling) are generating employment but just in the cities and people in the jungle and countryside are losing their jobs, pushing some of them to migrate to big cities.



**Figure 2.1**  
**Mexican Border States**



Note: Blue stars represent the geographical position of the State capital.

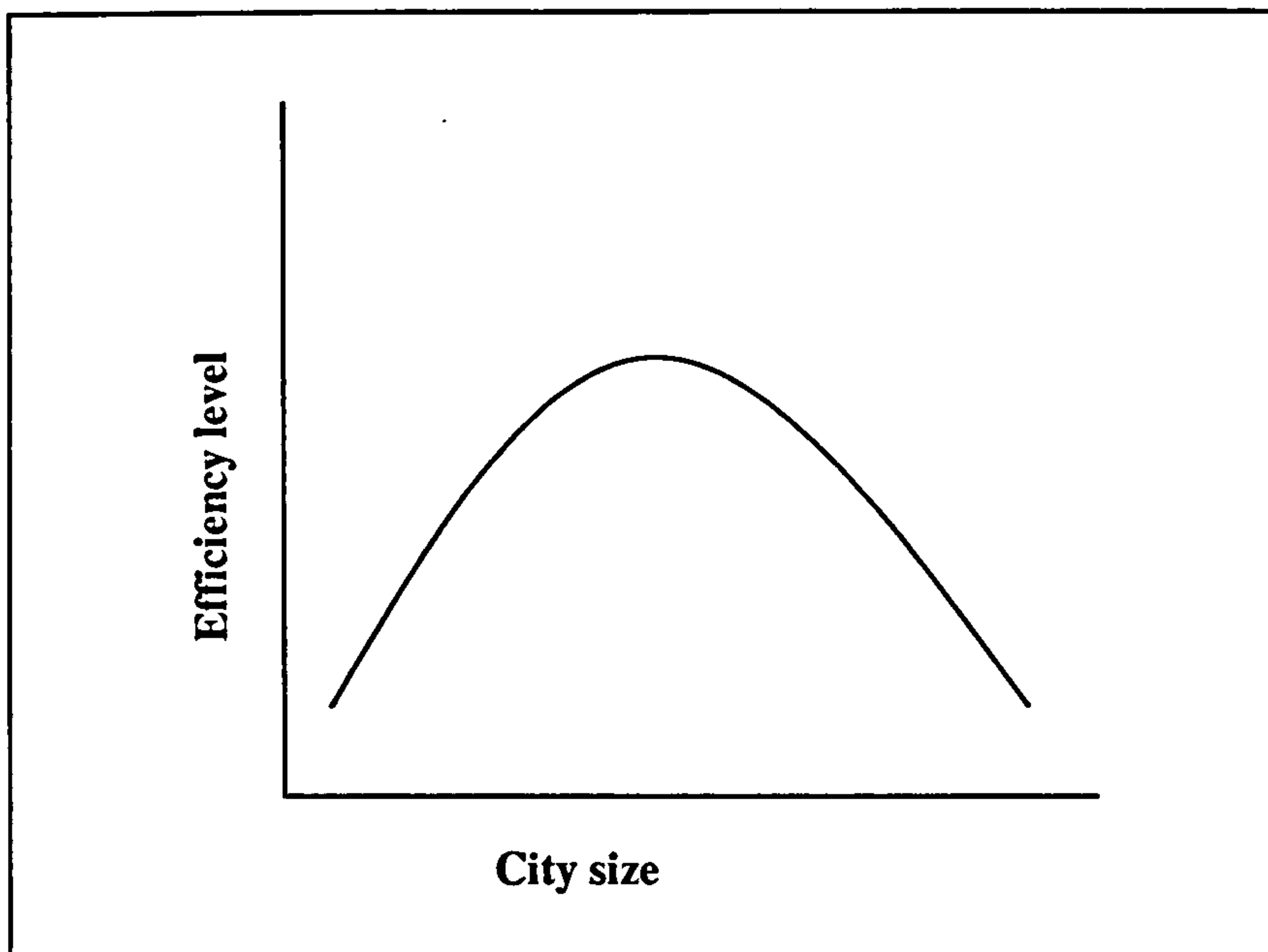
### Geographical unevenness

The role of cities, more than regions, is vital in the economic development process (Lovering, 1999). The size and density of a city allows it to attain agglomeration and scale economies, which are a pre-requisite for economic growth. Growth of urban areas makes possible the efficiency in production and the adoption of new technology thanks to more “future customers” who can buy the new improved products supposedly at better prices (O’Sullivan, 1993).

However, there is a certain point, as it is illustrated in figure 2.2 when efficiency levels begin to decrease. At the peak of the curve, cities are big enough to maintain a population without any negative effects. All services work to satisfy the needs of the people in the area and even to thrive without creating any negative effect. The down slope points to the decreasing returns regarding efficiency. When cities are excessively big, the emergence of problems such as pollution, traffic congestion and crime become a negative side effect of urban growth.



**Figure 2.2**  
**Size/Efficiency relationship for cities**



A good example of decreasing efficiency are the megalopolises of Mexico City, Tokyo, Rio de Janeiro and Sao Paulo, where more than 15 million people live in crowded conditions, excessive pollution, services incapable of dealing with the number of people requesting them, to name but a few.

The cities' attributes in reference to size, density, diversity and geographical localization tend to centralize economic activity. Meanwhile, this could be seen by some economists and researchers as something beneficial to people (in the cities are the best schools and universities, better salaries, more availability of financial institutions to new a few), for others, this could be problematic and even a dangerous issue (congestion, pollution, poverty, higher costs of living and so on).

The real problem are not the cities, but the operation and administration of them under parameters not maximizing the use of the resources available (Cochrane, 1993). The natural consequence is that some cities simply perform better than others due to the way they (understood as the local authorities) manage the resources (Wolfson and Frisken, 2000). The service provision is influenced by the kind of policy (right or leftist), spending levels and staff willingness to perform adequately their tasks. Those governments with high quality levels to provide good services to their inhabitants

enjoy high level of acceptance and are prone to be in power for long time. On the other hand, Right-wing advocates sustain that the private sector is naturally a better administrator than the public sector. Therefore, they tend to privatise the provision of services (rubbish collection, sewerage and so on) and take a business approach to the solution of social problems (Blackman, 1995).

One important element for economic development in developing countries and more precisely in their cities, is the infrastructure because it helps companies to operate with or without efficiency. Infrastructure should be understood as all those vital services required for day to day operations of all sorts of organizations, not just firms (Arsen, 1997). It is obvious that not all the cities have the same infrastructure level or even the same kind of it. For instance, some cities are crossed by motorways and roads but lack of industrial spaces. Some others are promoting themselves as industrial cities with availability of industrial parks but lack of motorways or simply are “so far away from everything” (Arsen, 1994).

There are other typical public sector roles like administration, tax collection, land use regulation and planning, education and health services. Activities such as city promotion, economic development or urban renewal are also important but are not directly perceived by the local population.

### **Social polarization**

The redistribution of economic activities within countries and among them has produced a social polarization due to various reasons. The growth of the inner city and the decline of the city centres brought about a clear fragmentation in the social context; poor people are now living in the first city ring and the wealthy ones live in the suburbs, characterized by low noise and low crime rates. The most common example of this pattern is marked by the increasing number of “malls” or “shopping centres” outside the first ring. This trend is mainly observed in western European countries and the U.S.A

Sassen (2000) claims that “...the intensified inequalities... represent a transformation in the geography of centre and periphery. They signal that peripheralization processes are occurring inside areas that were once conceived of as “core” areas –whether at the

global, regional, or urban level- and that alongside the sharpening of peripheralization processes, centrality has sharper at all three levels” (p.210).

Sassen (1994) also argues that the new forms of inequality like gentrified neighbourhoods or informal economy areas, create citizens differentiated not by the money they make but by the place they live or what they do. The point here is that social polarization is not good for cities because it generates social conflict and a sense of estrangement. The “underclass” population becomes excluded not because they lack of wealth but because they do not have access to the suburbs or shopping centres. In this way, social exclusion becomes a special issue and not a money issues as it used to be.

Social polarization is not just a social problem in postmodern times; economy, politics and communication activities are immersed in the functioning of societies and people are not the only assets in the system (Harvey, 1992).

Looking at Porter’s model (1995) of the inner city economic development, it can be seen that the emphasis has shifted from social to economic issues.

**Table 2.2**  
**The inner city economic development model**

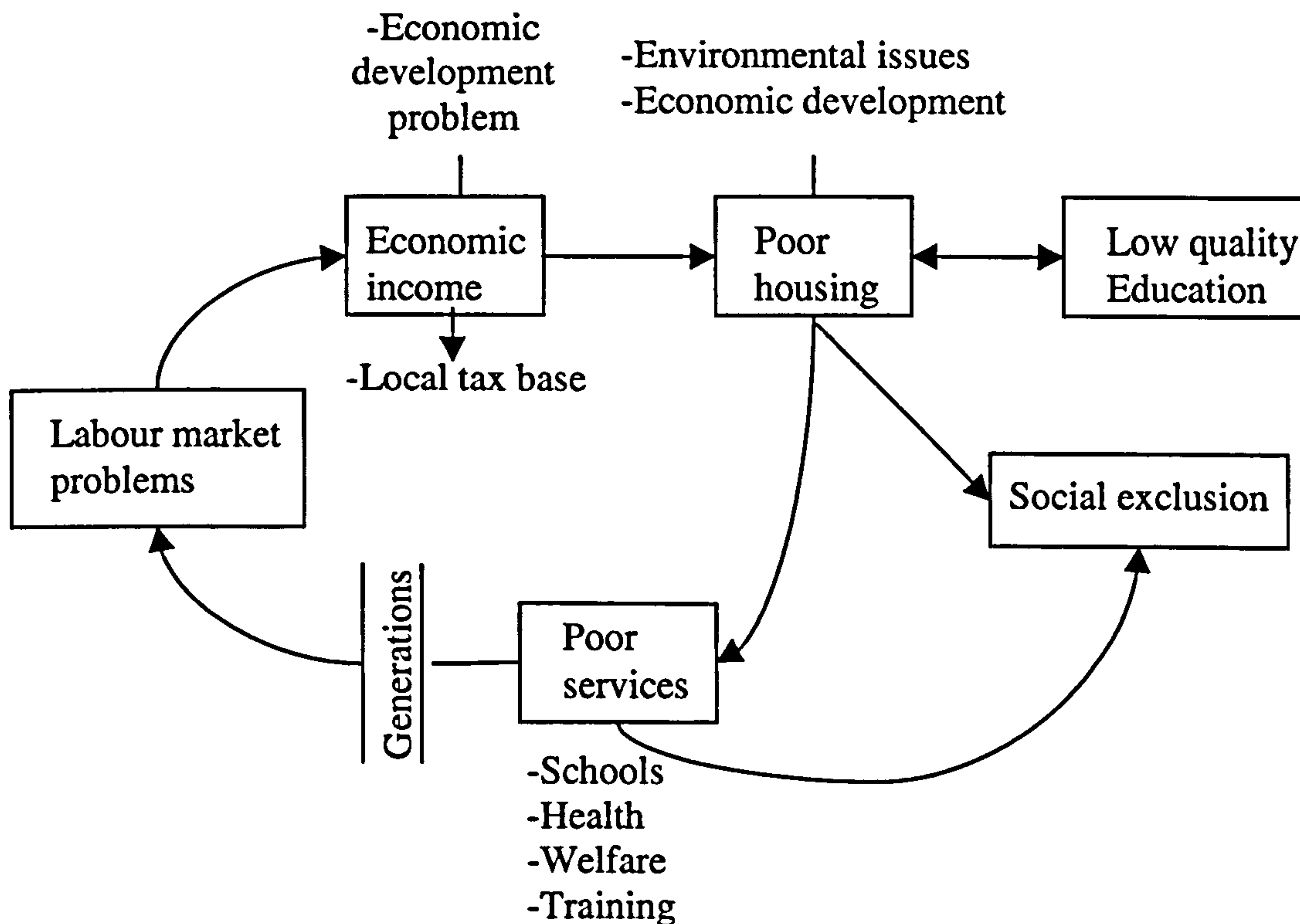
<b>New model</b>	<b>Old model</b>
Economic: create wealth	Social: redistribute wealth
Private sector	Government and social service organizations
Profitable business	Subsidized business
Integration with the regional economy	Isolation from the larger economy
Companies that are export oriented	Companies that serve the local community
Skilled and experienced minorities engaged in building business	Skilled and experienced minorities engaged in the social service sector
Mainstream, private sector institutions enlisted	Special institutions created
Inner city disadvantages addressed directly	Inner city disadvantages counterbalanced
Government focuses on improving the environment for business	Government directly involved with providing services or funding

Source: Porter, 1995, p.284.



Porter sustains in the “new model” that inner city efforts must be in creating wealth and that minorities must be engaged in business activities. As important as that is the question of how to address the disadvantages of the inner city without generating bad promotion.

**Figure 2.3: Running-down process in urban areas**



In developed countries the problem relies on the unbalanced of the cities themselves. The argument is the inner is fighting against the suburbs. Nevertheless, in developing countries the argument has shifted from “within the city” to “among the cities”. Savage and Warde (2000) points out that the cities in the third world are heterogeneous and “over-urbanized” causing inward investment to concentrate there. Over-urbanisation deals with the notion of cities with the complete provision of business and social infrastructure. In most of the cases, over-urbanised cities have a surplus of assets (land in industrial zones, water supply, universities and research centres, roads and motorways) due to their capacity to generate synergies. Since these cities are attractive, more people come to live in it, then the tax base expands, giving more resources to local governments which invest in roads, housing and so on. Companies are willing to locate in such places for its quality of life, providing local



governments with more money to spend. In consequence, the city thrives leading to an over-urbanised place.

As a result, there is an “urban bias” which produces a dualistic reality where some people enjoy the benefits of the investment through employment, better salaries and health and some others just live in an “urban apartheid” derived from the market forces, where opportunities to improve their quality of life never arise.

## **2.2 Policy design and urban economic development**

### **Decline in the economic development role of national government**

Recent international tendencies have seen national governments give away their responsibility for designing and implementing economic development policies. Local and regional authorities are now in charge of organising the adequate policies to generate better conditions of life in general. Blakely (1989) argued that national governments are more concerned about macroeconomic issues such as inflation, external debt and trade, and consequently they leave the development activity to the local governments. Blackman (1995) said that national governments have transferred the creation of development policies because:

1. Economic development activities take a long time to implement and consume a lot of resources which cannot be seen by the electorate.
2. Responsibility for looking after citizens is on the hands of local or regional governments, if the social, political or economical situation do not improve, then the national government is not responsible.
3. Companies do not negotiate incentives at national or even regional at level, they arrange conditions at a very local level, decreasing the bargain power of national governments, empowering delinked local authorities. Finally, the decision of what policies should be implemented to attract companies to bring about employment is responsibility of local authorities. It is assumed that “investment behaviour” can only be influenced by localities and not by countries.

Blakely (1989) also points out that national governments are just trying to maintain fair conditions amongst the competitors (cities). He adds that another of its functions

is to correct imbalances in the whole national system through more taxation or just reducing the handouts to the most successful places.

There is a trend in “regionalizing” economic development efforts in order to design policies to improve a more extended geographical area and to avoid competition. Besides, in this way, efforts can benefit more people and have a wider impact on the population (Blair, 1995). Nevertheless, even within regions there are discrepancies and differences in salaries, tax collection and future perspectives just to name but a few, and this make difficult to coordinate efforts because it is obvious that all local authorities want the best for their citizens (Blair and Kumar, 1997). Drawing on the same argument, it could be said that when a place (a city or a region) is improving its current economic conditions, it would attract people from other less wealthy places provided the housing market is affordable for those immigrants. The final result is that the “attractive places” will be saturated and opportunities will disappear. This is called the “Zero sum game of local economic development” (Blair and Kumar, 1997).

The argument of the “zero sum game” relies on the notion that for any given country the economic resources are fixed and the improvement of one place would be the at the expense of others in some cases. However, Goldsmith (1997) says that even when some cities decline and others grow, there is no empirical evidence to link city economic cycles or decline to urban economic development strategies between cities.

Goldsmith also points out that national governments are acting selectively because they are not helping poor cities or neighbourhoods. The rationale is simple, why invest in poor places when the rich ones can generate enough wealth to compensate for loses. From this perspective, local governments leave all the responsibility of generating development to national authorities, but because national authorities do not have resources, the vicious circle is reinforced and the running-down process continues for cities (Blackman, 1995).

### **Urban policy and urban economic development: new trends**

There is a need to link urban policy and urban economic development because they act as a mechanism to reduce inequalities. Urban policy aims for a balance in the society while economic development provides the economic tools to reach that

balance. Mexican urban policy has not worked because indicators have not yet converged in terms of salaries, prices, infrastructure, education and health.<sup>1</sup> There are still many inequalities amongst cities and inside the cities easily noticeable. However, according to the latest census, there are 40 million people living in poverty of a population of 100 million in Mexico.

Under this perspective, “good cities” have performed very well and “bad cities” have performed badly. Urban economic development models and strategies look for ways to reverse this trend and improve the current conditions of inequality. There are new approaches to balance urban economies mixing elements of urban policy and economic development. Some of them will be presented in the current section.

### *The inner city as source of growth*

Inner cities have been identified as new sources of growth. Emphasis is on renewing the city centres and attaching new commercial activities to it (Porter, 1995). The role of local authorities is to create the appropriate business conditions for companies. This includes infrastructure, physical space, security and in general all those issues that enhance the business activities. If the inner city does not provide the proper conditions, companies will be moving to the malls or shopping centres into the suburbs (mainly services and retail stores). There are good examples of local authorities doing “good things” but making mistakes in small details, like the one present below.

Joliet ILL (U.S.A) had a high unemployment rate of 18% in 1981. After struggling to keep companies in its territory and giving incentives to them, they moved out to the suburbs, to industrial parks outside Joliet (Felbinger, 1989). This left the city with a lot of problems. It was not just the unemployment, but also crime and murders in the city centre, drug dealing, gangs taking over the traditional commercial area, just to name but a few. Finally, local authorities obtained a grant to “re-design” all problematic areas and mainly the commercial district. Two years later, everything was ready for the grand opening. Policemen were patrolling to control gangs and drug

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<sup>1</sup> In subsequent chapters, statistical evidence will be provided.



dealers, incentives were allocated for those firms locating in the commercial zone and green areas were built to make a nicer atmosphere. But one problem came up, there were few parking spaces and those available were always occupied by police patrols. At the same time, a shopping centre in the near by of Joliet was opened and consequently, this was another reason for business not to move to the city centre. The project failed and Joliet is a small town with almost no economic activity where just retired people live comfortably.

There are various messages in the last example to draw upon. Firstly, urban economies are linked to each other, which means that any urban economic development effort must take into account other places efforts to avoid close competition. Secondly, the inner city has, as Porter states, many disadvantages to work on and they must be contemplated in the renewal plans. Finally, not all the inner cities have the same kind of problems and there are also successful cases of economic development programs like Baltimore and Chicago (Felbinger, 1989).

#### *A more active private sector in economic development activities*

The enhancement of the private sector in urban economic development initiatives and in political and urban issues comes from the neo-liberal framework. It is stated that the private sector performs better some activities that the public sector in terms of efficiency. It is though that because the public sector has no shareholders productivity is not the highest achievable. At the same time, it is recognised that the private sector cannot do everything alone (Wong, 1996).

The private sector also participates in economic development boards in cities. The “partnerships” are organisations aimed to design strategies to improve the general conditions of cities or particularly of communities within the cities. Mainly, they use central government funds and few times city funds too to tackle problems of poverty, housing and business development among others. For instance, Scottish Enterprise in Scotland has led efforts to improve the economic situation of industrial cities struggling to sustain a positive economic growth. The Welsh Development Agency is another example of the partnership between the public and private sector working together to generate business opportunities aiming at developing cities in a country.



There are two basic forms of partnerships: those where local government has the control over decisions and the case of civil associations where the government is just another member of the board (Bailey, 1994). Nonetheless, it is important to mention that in some cases, the local governments has the minority role (e.i. Pittsburgh, USA) lacking of any veto in decision-making. However, the most successful organisations, at least in the case of Mexico, are those managed by civil associations<sup>2</sup>. An attributable reason is the lack of political links in the design of strategies or policies. Local authorities do not carry out projects just to obtain votes in elections, instead the civil association assess the real needs of the population and establishes priorities to broaden the impact benefiting more people and generating more wealth in real terms (Taussik and Smalley, 1998).

#### *The real meaning of “local control” in urban development*

Over the past ten years, local governments in many countries have seen changes in the way “government” is conceived by either citizens or the national government. Some authors have questioned the term “local government” and “local governance” has emerged as a modern concept which really comprises the whole economic spectrum of economic entities. Johnston and Pattie (1996) make a differentiation between them. Local governance “refers not only to formal agencies within the state (that is local government) but also to a wide range of other actors, institutional and individual, private and voluntary and public sector, which are involved in regulating a local economy and a society” (Johnston and Pattie, 1996: 672).

**Table 2.3**  
**Roles of local authorities in Britain**

Before 1890	laissez faire ideas with power to tax
After 1945	growth of welfare state
After 1976	restructuring and retrenchment
After 1997	community leadership and the search for economic development

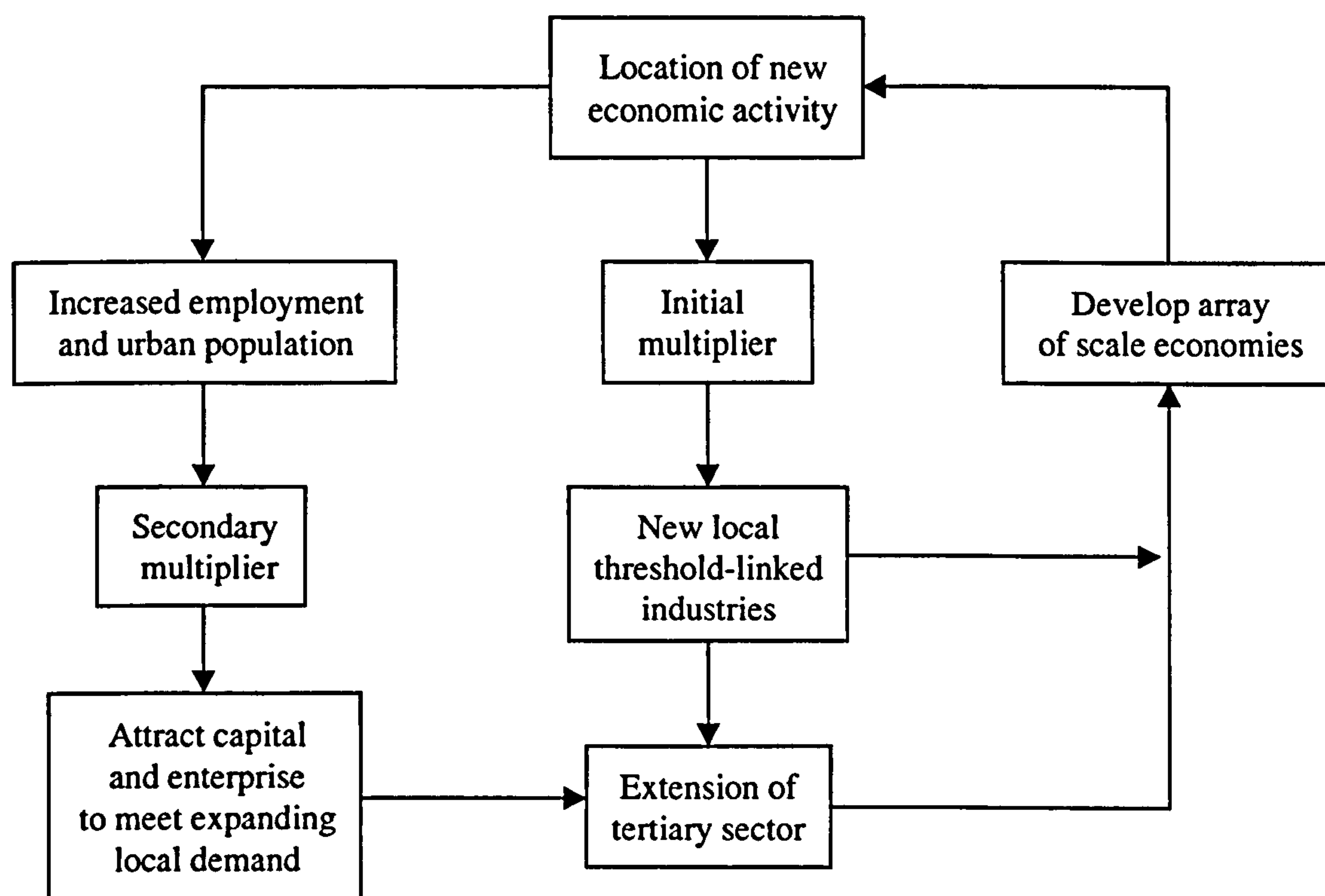
<sup>2</sup> A civil association is a group of people legally organised to carry out a determined set of activities with no profitable aim. Usually organised as a board with a chairman, the members have the power and economic resources to perform tasks and achieve goals in favour of the society.

As it can be seen from table 2.3, the role of the British government has shifted from completely no intervention to a more participate leadership, where economic development activities are the one of the main concerns. This example could be extrapolated to some other developed and developing countries such as Germany, Spain, Brazil or Mexico.

### Growth in urban economies

There is an area in urban economic development focused on whether or not the urban economic development process leads to a zero-sum game (James, 1984; Neenan and Ethridge, 1984; Felbinger, 1984; Wilson, 1996; Blair and Kumar, 1997; Goldsmith, 1997), where “winners” produce “losers” because economic resources are constant over a period of time.

Figure 2.4 A model of Cumulative causation



Source: Malecki, 1997; p. 16; based on earlier work by Thomson, Pred, and Others.

Blair (1995) claims that there are two types of growth: endogenous and exogenous. The former is based on internal factors such as the expansion of business already working in the city, development of skills in people throughout training, tax

exemptions, and local incentives like free land or ad hoc infrastructure, amongst others. Exogenous factors deal with external influences over the city, this is conditions not controllable by local authorities. The traditional exogenous factor is inward investment but national policies and even inter-urban trade and geographical conditions (closeness to border or other big cities) could be also considered into this category.

Cities are directly affected by firm's decisions of location and expansion (Blair, 1995, Blair and Premus, 1992) and these effects are employment levels, migration patterns, income distribution and housing to name but a few. Thus, different levels of growth will have different impact on cities. Two questions arise, firstly, what are the stages of growth if someone is to evaluate development paths (assuming the model is linear)? What explain the differences between cities in employment, income, infrastructure, etc.?

However, there are many possible answers and approaches to the questions, the emphasis will be allocated on Blair's (1995) development of Thompson's (1968) and Jacob's (1969) stages of urban growth.

**Table 2.5**  
**Stages of Growth**

<b>Thompson's stages</b>	<b>Jacob's stages</b>
Export specialization	Expanding market for few exports and suppliers of the export.
Export complex	Suppliers begin exporting directly.
Economic maturation	Goods initially imported into the area are produced and sold locally.
Regional metropolis	The city is enlarged and diversified local economy becomes a potential source of exports. Exports increase the volume of imports.
Technical-professional virtuosity	New work is constantly developed. An "economic reciprocating system" results in new skill or business.

Source: Blair, 1995, p.117.

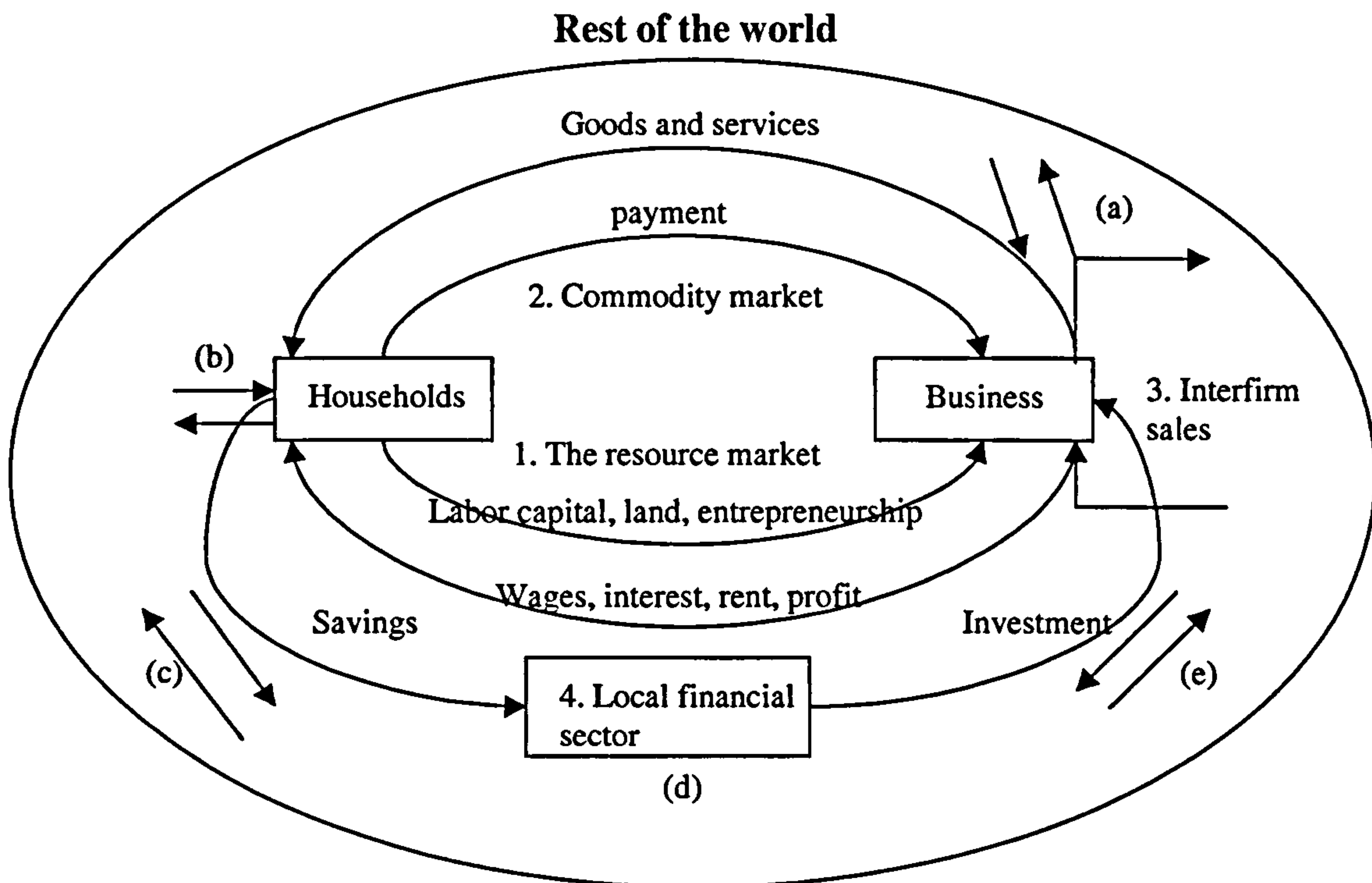
Surprisingly, both models share many things in common. For instance, both state the need of exporting as the first stage of growth and both end up with a "feedback" loop



(nonlinearity). The important point in both models is that growth has a series of stages which explain why cities within the same country could have economic asymmetries (Blair, 1995). Drawing on the models, the case of Mexico can be taken to illustrate the point. Therefore, cities like Mexico City with a metropolitan population of around 22 million people, is by far the largest city. Its role as capital of the country and with a set of characteristics just inherent to “capitals” places it in the last stage of growth. In second place, in the stage of regional metropolises, come Guadalajara and Monterrey with eight and four million people respectively. Their size and location within the country make them centres of national and international trade. Not just national companies import raw materials and export finished products, but also international companies import and export to international markets. These three cities concentrate around the 33% of the population and 27% of the internal trade (Hanson, 1998).

### **The circular flow model**

“The circular flow model is not a theory of how a region grows because it implies no causal relationships. Rather, it is a stylized picture of some important linkages and money flows” (Blair, 1995, p.120). Growth also deals with flows of many forms and this is what makes it relevant. Money moves from companies to people through wages and salaries, at the same time people pay for services and save money for diverse purposes. These savings serve as a stock to borrow and lend money to other people and companies for paying to others or invest, keeping in this way the flow in permanent movement. Because there are many transactions in an urban economy, flows become important due to the costs and profits generated in every transaction. Thus, stopping a flow would mean stagnation and increasing one would mean growth.

**Figure 2.5: A local circular Flow model**

Source: Blair, 1995; p.120.

Figure 2.4 remarks the role played by different markets to exchange products and services for money. These markets comprise:

1. Resources
2. Commodities
3. Interfirm sales
4. Financial markets
5. Exchanges with the rest of the world.

Any region or city has certain “inflows and outflows” related to economic activities. These activities can be described in terms of economic flows, defined as interactions within a space for which an economic system takes place, influencing the income of at least one economic agent of the urban system. Basically, there are two types of flows: circulatory and redistributive (Parr, 1986). Circulatory flows stem from the functioning of the urban system, based on spatial relations such as location of production, inputs or workforce location, among others. Trade, government transfers, capital flows, commuter-income flows and other forms of economic interactions are

included in this category (in figure 2.5, a, b, c, d and e are circulatory flows between the city and “the rest of the world”).

On the other hand, redistributive flows are not so easy to perceive or even to be present in the urban economy. Moreover, they produce changes in the spatial configuration of the city itself. A classic example of this effect is the relocation of factors of production from one system to another. Fixed capital investment or entrepreneurial expertise (movements to other cities or regions) are illustrative examples (Parr, 1986, Blair, 1995).

Cities are linked to each other in different ways but there are four “flows” which shape the economy of a place: a) trade, b) commuting and migration, c) government transfers and d) capital movements. These interactions amongst cities are crucial to the enhancement of the economic development of a place and determine the population, infrastructure required, business orientation, housing stock, government services, etc. (Wolman, 1987).

#### **a) Trade**

Parr (1986) describes trade interactions in terms “of commodity flows from the location of the supply to the location of demand (whether this involves the shipment of a good or the purchase of a good on a shopping trip), with an accompanying economic flow from the location of demand to the location of supply” [p.110]. However, he points out that, in the case of invisible trade, there is no such commodity flow but there is an economic flow from the place of demand to the place of supply.

Economic base theory claims that urban economic development is strongly related to trade activities (Venables, 1996, Amati, 1998). If a place or a region wants to generate a positive economic development circle, it is necessary to improve its trade levels among companies (McCann, 2001). Due to the fact that companies are always buying and selling, the critical point is how to help companies in a specific place to sell more than what they buy, in other words how the “city” could improve the conditions for companies to create more value added. There are various possible answers starting with the advocates of helping business to increase productivity through advice (Turok and Raco, 2000), training and job creation (Walzer and P’ng, 1995), incentives



(Persky, Felsenstein and Wiewel, 1997; Brace, 1997) and technology (Maskell and Malmberg, 1998; Malecky, 1997)

### **b) Commuting and migration**

A dynamic urban process would be described in terms of growth as the number of firms and households located in a city. At any given period firms are newly located in a specific region, and this is followed by new household entrants in response to an increase demand for labour (DiPasquale and Wheaton, 1996). Thus, commuting and migration patterns are processes resulting from individuals going to work in different areas from those where they live. DiPasquale and Wheaton, describe the process in terms of land value; firms and individuals look for the best place to locate, and the results are the better location, the higher the price.

Commuting is a result of the spatial distribution in a city while migration is a result of differences amongst cities mainly in employment opportunities and housing. The city centre is basically a space dedicated to commercial and business activities, which lost some “space” against the suburbs and their shopping centres, but it is retaking its role as business area. Urban economic development is looking at these areas as spaces where corporations can locate headquarters attracting the so-called “knowledge corporations”. Local authorities welcome these kinds of firms because they do not pollute and workers earn high salaries, besides they are in the inner city revitalizing the area economically speaking (The economist, 1998).

### **c) Government transfers**

Governments at all levels spend money in different issues. The basic items of expenditure are social welfare, education, health care, infrastructure, agricultural support, etc. In order to transfer money to these activities, the government collects taxes in a direct or indirect manner. Parr (1986) suggests that the national government acts as a device to distribute the income in the cities. Then, it distributes the money among the different economic agents.

Taxes and Federal transfers are the mechanisms through regional authorities at each level “earn” money not only to provide services, but also to solve many other problems and needs within the city. Under this perspective, local government plays an

important role in the economic system of the city not just spending but allocating it on those activities creating jobs, increasing salaries and in general, improving the quality of life of citizens (European Commission, 1999).

Government transfers are also ways to allocate money to those places with lower economic development levels or run-down areas where market forces have almost no opportunity to adjust favourably in the short term. The argument here is that government is another economic agent affecting economic performance over the cities. The European Union has programmes targeting cities which face problems of decline as a way to promote balanced growth in the whole Union (European Commission, 1999).

International aid serves as mechanism for growth in cities stagnating where employment levels decrease to a very low level due to industry relocation to other places offering better conditions in general.

#### **d) Capital movements**

Capital movements are the result of capital being owned in one place and invested in plant and equipment in another or invested in a bank for the same purpose: generating profits. At the same time, a given a “city” can be a borrower or a lender of capital. If the money quantities in the transfers are not the same, a negative or positive balance will appear between the region (Parr, 1986).

These capital movements are possible due to savings (whatever positive or negative) at one place. A net inflow is consequence of a saving deficit in a specific place, where money is required to sustain the production at a certain level. On the other hand, a net outflow of capital is due to excessive saving at that place, more than the required to keep the desired production level (Parr, 1986).

However, the movement of capital implies, in financial theory, a price to be paid by the entity asking for the money; the urban system is no exception to this rule. Moving capital from one level to another implies an extra payment by the level importing the money, called factor payment, which is in financial terms an interest paid by the borrower level. Parr (1986) says that in other cases the payment can be “transferred”

in form of profits or dividends, “representing a property income to the capital exporting level” [p.113]. In conclusion he argues, the movement of capital between places will lead to keep a balance of capital movements (positive or negative) between a city and the rest of the urban region, accompanied by a balance of property payments (positive or negative) as well.

Places or cities with positive capital gain will tend to have better economic performance than places with negative balances, supporting what is called a “circular argument”. In this case, urban development policies are palliatives to solve the unbalance of economic resources (Blackman, 1995). Local authorities are responsible for strengthening economic prosperity and keeping adequate employment for their citizens (European Commission, 1999). However, this is not as simple as it looks. It involves policies and negotiation between governments within a country. Urban economic development concerns city authorities but depends on funds not just from the city but also from central governments and due to this, it is clear that some cities will obtain more money than others (Waitt, 1999). For instance, Sydney and not Melbourne obtained full support from central government to bid for the Olympic Games and obviously this implied economic resources.

### **2.3 The economics of urban development**

The basic principle of economics establishes that the resources in any given population are limited and must cover unlimited needs of the population. Hence, there are two basic points in economics: a) how the needs are ranked and b) how the resources are allocated.

Urban economic development policies need to exist because there is an uneven distribution of resources amongst populations and cities within a country (Wolman and Spitzley, 1996). Industries and firms are not evenly distributed along countries or regions, even though authorities, at any level, must seek a way to distribute evenly employment created by companies and to generate more “resources” to satisfy as much as possible the needs of a growing population (Wassmer, 2000).



In conclusion, market forces do not work properly to achieve efficiency and effectiveness in the short term in the urban area, leaving a time lag where people suffer and scarcity is the common denominator.

This section presents briefly some of the most traditional approaches and well-known strategies dealing with the concept of uneven development across regions and urban areas.

### **The principle of market failure: the welfare state**

In neo-classical economics, markets are assumed to be perfect mechanisms to adjust supply and demand forces at any time in order to provide the best combination of resources at the best possible price (Fisher and Dornbusch, 1996). However, the truth is not necessarily so. Markets take a long time to adjust to changes in supply and demand generating chaos whilst they reach their point of equilibrium.

Welfare economics justifies government intervention because companies do not act according to social behaviour. In a few words, markets are more important than are people for them. Indeed firms seek profits in the short term and consequently there may be damage to the society (Savage and Warden, 1993). Much of the debate about “optimal city size, urban settlement patterns, trading of economies of scale arising from larger cities against transport costs and external diseconomies in urban density, environment and social behaviour” are contained here (Bovaird, 1992).

The “welfare state” comes from Germany, in order to create organizations to help individuals to improve their standard of living against distortions in the market forces (Cochrane, 1987). At the urban level, there is a mismatch between areas with high concentration of industries and those with almost no economic activity at all. Welfare policies help to redistribute money and help to reduce inequalities. Nevertheless, it is not an effective mechanism because it does not generate growth and only solves the problem in the short term and some people become dependent forever. For local government it can become an economic burden and due to the government’s participation there is price distortion increasing prices and inflation soars.

To sum up, welfare economics considers that markets are not perfect at the micro level and consequently governments must participate protecting those who do not have skills. Welfare economics has also changed its bases due to “globalization”. It has put pressure on the welfare state because intervention is not a desirable aspect in modern economies. The trend is to have less and less government participation in the economy but a more efficient bureaucracy and more private participation not just in the design of urban policies but also in designing, implementing and evaluating economic development programmes (Eisenschitz and Gough, 1994).

### **New institutionalism: the creation of industrial districts, growth poles, and developing clusters**

The roots of the concept of “new institutionalism” lie in industrial organization, economic history and development, and law and economics. It has been applied mainly in economics and political analysis as a new way to explain the incidence of political participation in issues like economic development and business strategy. Basically, it rejects “observed behaviour as the starting point for political and economical analysis” (Immergut, 1996; 2) because behaviour is not sufficient basis for explaining any kind of social phenomena.

Eggertsson (1997) argues that the new institutionalism paradigm arose as a response to the poor performance of development economics and economic policy analysis, which could not provide the answer for a rapid transition in the Third World and in depressed areas in developed countries from extreme poverty to acceptable living standards as those of wealthy places.

Whilst the old institutionalism emphasizes the central role of models in policy formulation (modelling is the core of the process), new institutionalism tries to analyze the effect of the interaction among those elements in the model. The outcome of the model is not the real concern in this paradigm. What does really matter is what can be explained adding more variables to the model, this is the interactions. The old paradigm is based on quantitative data while the new one uses also qualitative data because decision processes cannot be quantified.

In the context of urban economic development, the new institutionalism provides a framework for industrial organization. In this way, clustering the industry where it can have the proper infrastructure and gaining competitive advantage while providing jobs is the government “new” form of action to set up the conditions for economic development (Eggertsson, 1997). Government takes more participation in organising the industry but it does not interfere with the market forces. Besides its new role is as distributor of economic activities to increase the levels of welfare of a region or a city.

### *Industrial districts*

Industrial districts were conceived to agglomerate firms in one geographical space to generate growth by taken advantage of different agglomeration effects. The strategy aimed to create scale economies for regional and local governments in the provision of industrial infrastructure, creating networks of producers and linking the local labour market to production (Hayter, 1997).

Industrial districts presents three characteristics (Hayter, 1997; p.329):

- a) Geographic concentration of activities.
- b) Populations of small and medium-sized firms which are linked together in various ways.
- c) Appropriately skilled and accessible labour pools.

The implications on urban economic development are obvious. Firstly, local governments save money concentrating industrial infrastructure in just one place. Secondly, there is more demand for employees, decreasing the unemployment level. Thirdly, the fact that companies work together in a place serves as a promoting strategy to attract even more companies and thus generate a virtuous circle.

In general terms, this is the most common strategy followed by the Mexican government at regional and local level since 1995 after the economic crisis. Industrial districts in Mexico provide childcare for female workers and half-day schools under “the same roof” (just near by the industrial facilities) avoiding in this way extra time, money and transport to leave children in one place and working in another. Other benefits for the industrial community are research and development centres (most of them associated to local universities), consultancy firms, amusement facilities and hospitals for employees.



*The growth-pole strategy*

The growth-pole strategy emerges as a response to the depressed-area problem of the 20<sup>th</sup> century in developed countries (Parr, 1999a; p.1199). The problem was areas which at one time had a good economy but due to “exogenous shocks failed to adjust adequately to these” (p.1199). He goes on stating the many attempts made by developing and developed countries to apply the strategy “in a variety of settings”. Advocates of this strategy intend to fill the spatial voids attracting economic any type of economic activity assuming that the advantages of the place will serve to any company.

Parr (1999b) also claims that the basis for the adoption of growth-poles strategies arise from “the fact that the spatial structure of a region is in some sense deficient, either for exploiting the region’s existing factor endowment or for attracting and sustaining a set of economic activities within the region” (p.1247).

An example of the implementation of growth-pole strategy is Scotland Central Belt, located between the two mayor cities of Scotland: Glasgow and Edinburgh. It was a response to the declining steel industrial sector and massive dismissals in shipyards. The strategy aimed to attract businesses to compensate firstly the loss of jobs and secondly to establish a economic base for Scotland, taking advantage of the geographical location, industrial infrastructure (accessibility to motorways, closeness to the most important cities of the country) availability of labour due to high unemployment levels in Glasgow.

This strategy has not been implemented in Mexican territory as such, at least there is no evidence in the academic literature. However, the maquiladora cities in Mexico (Cd. Juarez, Tijuana, Matamoros and Reynosa) may be an example of such strategy but just in some sense because these cities have not supported a strong economy in the past and cannot be considered declining economies.

*Cluster-developing strategy*

Industrial cluster completion has been traditionally a strategy followed by some urban authorities to promote their city in the industrial arena. The idea is to attract companies related to a specific industry and in this way to have the whole set of

companies of one sector, ranging from the last supplier to the main assembler and manufacturer (Wong, 1996). It is assumed that if companies from one industry are together, transport costs will decrease and large pools of labour already trained will be available. Local governments support this strategy because if the cluster grows, the city grows as well and the consequent economic spillovers will permeate to the rest of the population.

To develop clusters, local governments give incentives to those companies fitting the profile of the industry they want to attract. The rationale for urban economic development is that if companies are more competitive and have scale economies and access to raw materials, better salaries will be a natural consequence, increasing the economic activity of the locality. Besides, it is supposed that companies will be willing to relocate their facilities in those places offering the best possible conditions providing more employment opportunities. However, better salaries tend to soar inflation in the area (Blair, 1995) and to produce some drawbacks such as pollution, traffic congestion, lack of housing, and even excessive dependence on only one economic activity.

In spite of all the drawbacks that this strategy may have, it is possible to provide a good example of the cluster strategy in England. Based in Luton the automobile industry has flourished thanks to the integration of suppliers and assemblers around carmakers. Almost every part of a car is manufactured in the city with the consequent economic benefits.

Completing clusters has various advocates in Mexico among the local governments. Some cities in the country have traditionally and systematically followed this strategy to enhance their economic performance. For instance, Saltillo in the northern part of the country developed the automobile cluster since the beginning of the 60's. Chrysler and Nissan, two carmakers have large facilities that provide employment to more 6,000 people directly, but it is reckoned that 50,000 jobs depend indirectly from these two companies.

## **Geographical specialization, agglomeration economies and comparative advantage**

Geographical specialization is a consequence of clustering activities, intentionally carried out by local governments through incentives or by firms in order to achieve certain levels of competition and to have access to a pool of labour, raw materials or large markets (Venables, 1996).

Hayter (1997) contends that the pioneer firm (the first large company in an urban area) is responsible in most of the cases for geographical specialization. He says that when companies reach large sizes, they usually need more and more resources, integrating in this way other companies or simply making the need for more companies to be born in order to supply any kind of materials and services.

Another factor for geographical specialization is climate. Some activities require specific conditions. For instance, some companies do not go to places with hard winters because snow can stop the supply of raw materials or extreme weather conditions can damage the final product (Venables, 1996).

Raw materials also play an important role in shaping the geographical grounds. Some industries need to stay close to the sources of raw materials. The food industry is a good example and particularly those companies associated to fish canning. These companies are always located in coastal areas because fish gets spoiled very quickly.

A supply side argument proposed by Amati (1998) says that companies tend to concentrate in places where there is a good access to large markets. "The new economic geography literature extends this line of research by showing that international or inter-regional demand differences are themselves likely to be endogenous –either because of mobility of workers or because of mobility of firms which demand intermediate goods" (p.46).

Nonetheless, there is a logical argument not envisaged in the last case. Since most companies depend nowadays on "just in time" inventories and delivery systems, the need to be closer to the customer becomes imperative. Clustering becomes a requirement followed by suppliers to attend their customer's needs rather than a



government strategy, where the designers are the industry competitors and local governments profit from this fact promoting their cities as places with a “cluster of the electronics or pharmaceutical industry” to give but a example.

Hanson (1998) argues that “geographic concentration of economic activity is often cited as evidence of increasing returns to scale” (p.34). This is a relevant argument in urban economic development. If cities want to increase their economic activity they must look for ways to generate some sort of “industrial concentration” maybe following cluster strategies or designing industrial districts aimed to generate the most adequate conditions to operate (Malecki, 1997).

Geographical specialization leads to agglomeration economies. A formal definition of agglomeration economies is provided by Parr (2002) in terms of a reduction in transport costs but also as decrease in the costs of a firm due the concentration of activities in a specific space.

Companies working close to each other take advantage of lower transport costs and labour availability basically. Yet, companies have more reliable information about markets and competitors because they have the companies next to themselves and can “see” their operations (Hayter, 1997). The concept of comparative advantage arises here; places close to or in large cities or with relatively large availability of natural resources have a comparative advantage against other places that do not have these elements.

Comparative advantage is granted by “natural conditions” to cities. In contrast with competitive advantage where local governments create the conditions for companies to compete successfully. Comparative advantages are already there and are inherent to the city. Therefore, a city close to the seaside has a comparative advantage for the fishing industry than those cities not located in coast. Nevertheless, competitive advantages can overcome comparative advantages as industry depends less and less of natural resources and telecommunications bring people and resources nearer (Gaspar and Glaeser, 1998).

The main problem is how to attract companies requiring agglomeration economies in a city without putting so much competition among them. What factors must be stressed to persuade companies to locate in a determined place is another relevant question in the search for urban economic development.

#### **2.4 The role of competitiveness and attractiveness in the local economic development cycle: an introduction**

Although the concept of city competitiveness has been broadly studied at national level (World Economic Forum, 1997, 1998; IMD, 1998, 1999); regional level (Krugman, 1991) and urban level (Lever, 1999; Kresl, 1995; Kresl and Singh, 1999; Porter, 1998, Cheshire, 1990, 1999) it has not been linked to broader areas of knowledge to explain why some cities perform better than others (Andersson, 1999).

Competitiveness is largely characterized by “rankings” (whatever the unit of analysis is: cities, regions, or nations) where the idea is to define, using a set of variables, what place is the best. Papers in competitiveness are usually finished presenting rankings where the first places and the very last ones take most of the attention, positively or negatively and there is no explanation of why they perform in such a form. Moreover, the comparisons do not envisage the different vocations of the places. For instance, in Cheshire’s ranking (1999), the functional urban regions (FUR’s) are assumed to have the same economic base.

Thus, cities with a tourist base (Malaga, Venice for example) are compared with world financial centres like London and Frankfurt, making the ranking unfair in terms of economic assessment. However, this does not mean that it is wrong or does not make any sense, the rationale for the statement is to provide a reflection on how to assist cities in order to improve their performance not just in the rankings but in the overall economic indicators.

On the other hand, city attractiveness deals with how to attract companies to cities in order to create jobs and to take advantage of the traditional spillovers of new firms such as development of local suppliers, immigration of skilled people, demand for housing, just to name but a few (Andersson, 1999).

Nevertheless, direct investment attraction (attractiveness) activities carried out by local authorities are isolated from urban economic development activities (Stocker and Young, 1993). Marketing the city is now an activity in itself within local authorities. It is common to see places where the local government has a department of “marketing” for the city. This led to unstructured strategies where policies were not convergent and objectives were opposed (Stocker and Young, 1993). For example, social and employment policies aimed to break up ghettos and incorporate minorities through special projects in fringe areas would be against policies aimed to develop industrial parks. Gilbert (1992) implies that competition under these conditions would be unfair because industrial parks have better infrastructure than depressed places.

It can be inferred from this section that neither urban competitiveness nor attractiveness are associated with urban economic development in order to explain urban economic performance and consequently to enhance the local economy and social conditions of any location. Hence, it is necessary to demonstrate theoretically and empirically the relationship amongst the concepts in order to improve the modelling of urban economic conditions. Bovaird (1992) claimed that “There is a clear need for more empirical research but also for more operational formulations of many of the conceptual frameworks” (p. 363). It is also important to mention that “there is also a need to apply existing modelling frameworks (including statistical models and decision-making models) to a wider range of problems “ (Bovaird, 1992; 363).

In order to follow the research line proposed by Bovaird, this research intends to contribute in two ways. Firstly, it will provide a conceptual framework where it is assumed that competitiveness is the mechanism to sustain a city at certain economic level whereas attractiveness is the economic propeller to move it forward. It is also hypothesized that the sum of competitive factors plus attractiveness factors at urban level is equal to local economic development. Secondly, it will intent to create an econometric model able to portray formally the economic development function in terms of competitiveness and attractiveness variables.



## 2.5 Conclusion

This chapter has presented a review and in some cases a critique of the main issues and theories in urban economic development. The objective was firstly to define the concept of economic development at urban level and to present its main differences with the same concept when it is referred at national level. Secondly, it was presented a justification of why it is important to continue developing a more robust framework using other concepts such as competitiveness and attractiveness.

It is also concluded that growth is the first stage of development and if local governments want to induce growth it is necessary for them to focus their efforts in four economic flows: trade, migrations-commuting, government transfers and capital movements.

Finally, it is concluded that cities can increase their economic development level by improving either their competitiveness or attractiveness. Chapter three and four will draw upon the various definitions and approaches to urban competitiveness and attractiveness respectively as well as the way they impact on economic development and will review the mechanisms that lead to growth stages, for the case of attractiveness, and development for the case of competitiveness.

# Chapter 3

## City attractiveness: enhancing local economic development

### Introduction

The aim of this chapter is to describe the concept of city attractiveness in terms of the local or urban economic development process (LED). It is hypothesised that the starting mechanism to improve the economic conditions of any city is by emphasising city attractiveness factors to persuade investors that there is not a better place to carry out their activities.

It is important to mention that the perspective presented in this research deals with the links theoretically associated and discussed by scholars between city attractiveness and economic development. Besides, the concept of “attractiveness” is presented in terms of the city’s capacity to attract direct investment either foreign or national. In a few words, how attractive the city is to pursue firms to locate in its political territory.

Finally, the “attractiveness” concept is discussed with two perspectives. In the first case, it deals with the urban policy efforts made by local authorities to marketing themselves as the best option for investments. In the second, investors analyse and compare cities to select the best place to carry out their operations, which is the traditional location analysis.

### 3.1 Defining “attractive city”

Defining the concept of an attractive city is not as straightforward as it could be thought according to Andersson (1999). In order to clarify the concept, he proposes two perspectives to describe the concept.

Firstly, distributionally attractive cities. Such concept “is based on a politically determined objective that a national or city government wants to improve the situation for certain groups at the cost of other groups” (p.79). This definition implies a cost

approach when defining attractiveness in economic terms and produces a conflict between the main economic actors: investors and people. On one hand, investors are clearly a group of people requiring some conditions to allocate their economic resources in a city to make profits. On the other hand, there are citizens with needs requiring spaces and certain conditions to live.

A typical example to illustrate the current approach is when investors want a piece of land already occupied by people to locate a factory. Local authorities must favour a group: investors or citizens. In either case, there is cost. If citizens are favoured, they will remain in their places but fewer job opportunities will be available. If investors obtain the land, people will be forced to move out to other parts of the city but more jobs will be available.

Secondly, Andersson (1999) defines city attractiveness in terms of socio-economic aspects. The goal “is to improve the situation of any group when it is possible to do so without simultaneously worsening the situation for any other group” (p.79). The implications are related to the concept of “at least nobody is worse off”. Thus, part of the population receives economic benefits without “passing the buck” to others. The classic example is the design of programs for homeless people, where just a small part of the city’s budget is used to tackle the problems of people with no house. Hence, the “costs” of helping this group will not be transferred to others.

The discussion of the two approaches to define an “attractive city” by Andersson led to think about the concept of Pareto-optimal situation. The idea behind the concept is that the welfare of one or more individuals must be the maximum possible but without sacrificing the welfare of others (McCandless and Wallace, 1991). In other words, if someone increases its welfare level, it is expected that nobody decrease its own.

It is clear from the definition provided above that the political context in the first definition does not comply with this requirement. The second one is Pareto-optimal oriented. It means that it can be incorporated into an urban economic development concept. The political approach does give a growth connotation but not a development one because, as it was assumed in chapter one, development is a step further ahead of



growth, where “almost” everybody (citizens, institutions and governments) obtains more economic, social or political benefits.

Serrano (2000) also discusses the meaning of “attractiveness” and explains that it is extremely related to the competence for direct investment among local authorities. Attractiveness represents an effort to reinvent or redesign cities in terms of its resources and institutions to obtain a better economic level for its citizens. It is not just a matter of marketing the place in a different way, it also represents a new mentality among the individuals in a place and how social, political, economic and environmental factors are linked together to enhance the competitiveness of cities within a development context (Serrano, 2000).

A straightforward definition a city attractiveness is provided by Portnov and Evyatar (2001) who claim that attractiveness of urban places is the capacity to attract resources (human or economic) and to hold on to existing assets.

Begg (2002) uses the concept of “investability” as a synonym of attractiveness to describe the conditions required by cities to attract more investment and to enhance the conditions of the economic agents which are already operating there. His argument is that local authorities should provide a business atmosphere capable of sustaining businesses in the long term instead of providing economic incentives. In conclusion, he claims that investability is the set of policies aiming to increase the total investment in a place, described as a function of the type of investor (public or private), the location attributes (public capital, factor markets, social factors, governance factors) and the sources for those attributes.

In a recent world research, Clark (2000) describes the need for making the cities more attractive but not only for companies, but also for people since human resources are an important input for companies. He complements his argument saying that to encourage growth it is necessary for local and regional governments to have a more market-sensitive management to seek the expansion of the tax base by either augmenting the number of firms or by helping them to grow. This is a good strategy for generating more opportunities for the labour force.

What is more, Clark (2000) places special emphasis on amenities as the driving force to make cities not just more attractive but more prone to achieve a higher economic development level (p.15). He argues that city attractiveness strategies must be related to policies aimed to enhance the quality of life of inhabitants by improving the local economy.

Additionally, Clark (2000) claims that the new paradigms in urban research look for ways to create cities more attractive for both people and firms without keeping aside the notion of development more than growth. In cities like San Francisco and Chicago in the U.S.A. there are now policies of growth control and more pro development. Growth control policies range from restrictions to build skyscrapers to the kind of industry desired in the city. Pro development policies are focused on incentives to help companies to be more productive and to help people to increase their knowledge to improve their employment possibilities or to have access to better paid jobs.

Another suitable definition to understand clearly the concept of attractiveness is given by Griffiths (1998), who argues that "...place marketing has been concerned with attracting a share of the increasingly volatile flows of capital investment, consumer spending and affluent or highly skilled migrants" (p.45). According to his argument, the design of a place image or "city attractiveness level" is a kind of urban governance aimed to convergence investors and the current assets possessed by a city that can be manipulated by local authorities, to induce growth and development. However, he continues, local authorities have restricted abilities to make a place more attractive and concludes that the attractiveness of a city hinges on the role it occupies in the national and international urban system, if we want to see the cities linked to the global economic process.

Although the last definition deals with the notion of place marketing, it also includes a very important component in economic development: capital to be invested. It can be inferred from the last paragraph that making the city attractive for investors would lead to more capital invested and therefore more jobs, and the well-known spillovers of new companies or expansion of those already there. However, it must be recognized cities must have a particular role in the national urban system if they are to compete for attracting businesses, otherwise all the efforts would be senseless. In

order to make a city attractive for investment, there is a need for some specific characteristics, like availability of human resources, raw material, good infrastructure, research and development centres, appropriate business support, to name but a few. Under the LED approach, this means a starting point to support a growth cycle and the starting point for the design of strategies intended to improve all the factors that make a city a good place to live in.

Another interesting and more complete definition about city attractiveness is provided by Van den Berg and Braun (1999) who say that:

“Cities aspire to become and remain attractive places for (potential) residents, business and visitors. In this process, cities ‘invent’ their own marketing strategies, discovering that the marketing of a city or region is not as straightforward as many people think” (p. 987)

Stewart (1996) maintaining the same kind of thought also argues that:

“Different cities vie with one another to attract inward investment or enter competitions which may win resources for the locality. Competition is rife, with energetic coalitions engaged in attempts to bring growth to their own locality” (p. 24)

The relevant point in Stewart’s definition is the idea of “winning resources for the locality”. In one way or another, these resources are “translated” into growth because more money divided by the same population means more money per capita. Politically this is really a good indicator when local authorities are evaluated, but as it was discussed before, it does not necessarily mean development.

Gordon (1999) on the other hand, conceptualises city attractiveness as a form of competition, where cities fight for inward investment, funding, events and the location on their places of higher levels of government. His central point is that there are only few “real competitors” for such rewards and consequently they are identifiable. This fact produces in the long-term gains and losses for specific cities, making marketing strategies a very risky but worthwhile activity for local authorities.

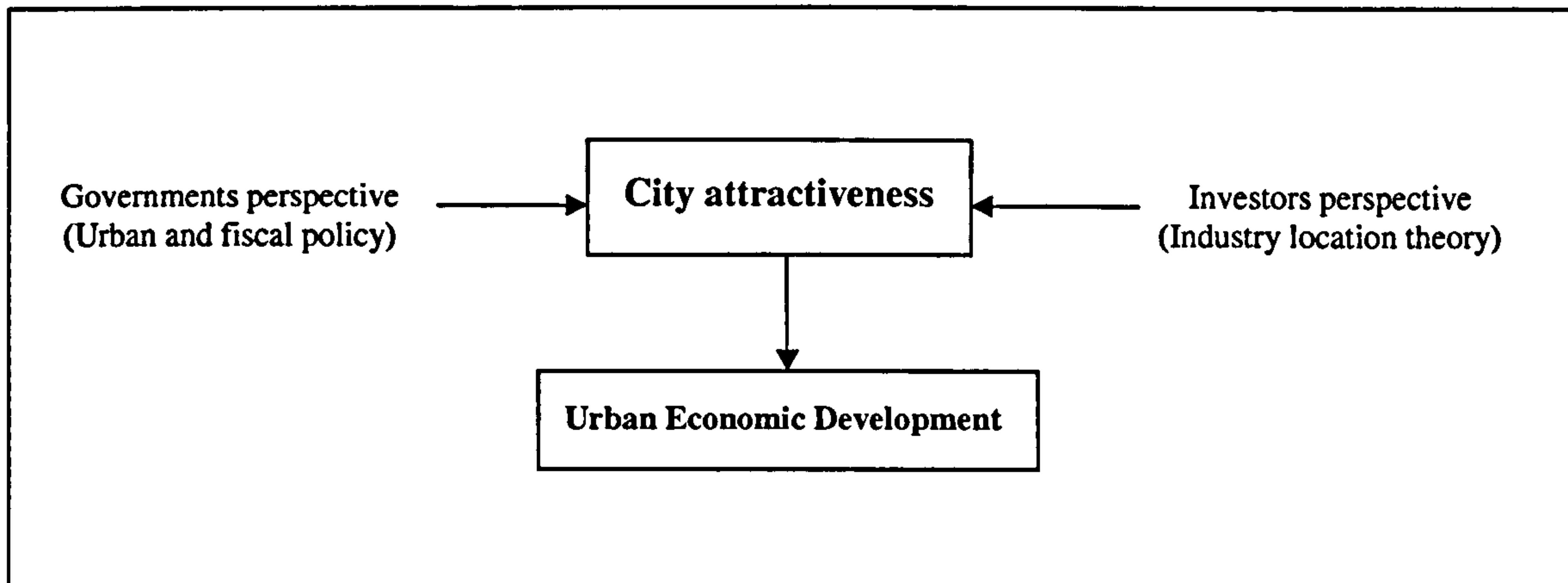


### 3.2 Marketing of cities or industry location analysis: Two approaches to attractiveness

There are two traditional approaches to study and assess city attractiveness. The most fashionable is the marketing of cities (Kottler et al., 1993) or selling places as other authors call it, because so many cities around the world are involved in a process of “reinventing themselves” in order to be attractive places for both people and companies (Philo and Kearns, 1993). Another perspective is given by the theory of industry location, which is considered more formal than the marketing approach due to its set of mathematical tools to assess and compare places between each other. The decision of where to locate a new company or to expand an existing plant is carried out by comparing results (numbers) emerging most of the time from a process of maximisation or minimisation according to the case (Hayter, 1997).

It is important to notice the implicit notions of competitive and comparative advantage so as to clarify the limits where cities can be reinvented. A competitive advantage is developed by one entity (nation, region, city, institution, a person) through a specific improvement on a particular factor or set of factors. Technically the idea is to reach a higher level of performance over the other competitors by improving those skills, abilities or activities where there is certain easiness and the ratio cost/benefit is maximised. Comparative advantage deals with the inherent attributes of an entity with respect to others to gain an advantage without the need to develop any particular skill or ability. The environment has created specific conditions under which the competitive conditions are advantageous for the entity and not replicable by others, leading to a unique position.

An example of comparative advantage can be given in terms of exports to the U.S.A. Therefore, Mexico has a comparative advantage over Taiwan because transport costs are lower due to its closeness. Nonetheless, Taiwan has a competitive advantage over Mexico in the electronics industry since the Taiwanese have been specialising in this sector for a long time and are regarded as the most successful electronic engineers in the world.

**Figure 3.1: Factors and economic perspectives associated to city attractiveness**

### 3.2.1 Marketing the city

Although the conceptualisation of the city as an “asset” is relatively new, the idea of selling places has been in the urban policy agenda since the 30’s when the Americans began to market the cities of Chicago and New York as financial centres of the new world (Philo and Kearns, 1993).

Marketing the city is an urban policy strategy aiming to reshape the city image in those places affected by negative perceptions either in people or investors. Crime, a high unemployment rate, vandalism, amongst others, are considered as undesirable conditions to create or to expand companies, while low crime rates, availability of infrastructure and a government keen on business activities are considered positive attributes.

The core idea behind the notion of marketing the city is to develop new ways to characterise the city in order to renew it. It is broadly related to the post-industrial city where manufacturing is not anymore the main economic activity and services become the most important source of employment and money generation (Figlio and Blonigen, 2000). It is necessary to change the image of cities to give them a more attractive way to bring people with entrepreneurial skills to generate economic growth. As a consequence, cities are commodities that can be sold in the market.

The rationale for change is that the place has been stuck in certain economic level for long time or that it has a run-down economy, so that local authorities and other

institutions responsible for inducing growth and development look for ways to produce a positive change for bringing people and investment. This attempt to commercialise cities has started exposing them to other societies or “markets”, and people play an relevant role in the commercialisation process due the fact they portray the life in a place as well as their attitude to work, leisure, consumption, etc (Philo and Kearns, 1993).

Local and regional authorities willing to change the image of their areas require manipulating the perception of local people about their city because they are the greatest promoters not just about the advantages of the place but also the economic advantages of it in relation to quality of life conditions (Wong, 2000). However, the issue is not easy to solve due to the opposition of certain authorities (mainly the rationale of political parties), which do not want to manipulate the population’s perception. Instead, they prefer to commit people with their area to enhance the sense of belonging. For some local governments, the manipulation of the “image” represents a lie because there is no support for the change in terms of infrastructure, technology of commitment by other local institutions.

However, the problem arises when balancing image and substance. Selling just images has risk of worsening the place in case the “sold image” is not the one expected by the public. Places publicised in one way and not responding to the expectations amongst population and investors might have a devastating negative promotion.

It can be appreciated in table 3.1 that marketing cities and measuring their attractiveness is relatively a new approach; so far no more than twenty-five years have passed since the main wave of academic research in the area appeared. 1993 seems to be a prolific year in developing the theories related to place marketing and the analyses of cities with problems to attract direct investment. Paddison (1993) presents a good example of city attractiveness in his paper about the city of Glasgow and its problems to “sell” its image as a cultural city.



**Table 3.1: Comparative approaches to place marketing**

	Author/s	Main contribution
<b>Defining the concept of city attractiveness</b>	Head et al, 1999	City attractiveness in terms of its functionality.
	Fox and Neel, 1987	City attractiveness from an investors' perspective.
	Andersson, 1999,	An economic definition of city attractiveness from a social perspective.
<b>Defining place marketing</b>	Kottler et al, 1993	Founders of the concept of the "science of marketing places". What needs to be done to market a city.
	Paddison, 1993	An example of marketing places as a strategy for LED.
	Philo and Kearns, 1993	Marketing the city as cultural asset.
<b>Modelling and measuring city attractiveness</b>	Mariotti and Piscitello, 1995	Variables to measure city attractiveness.
	Bartik, et al, 1987	Introduces the notion of external shocks in modelling city attractiveness.
	Serrano, 2000	Compares attractiveness and competitiveness to differentiate them.
	Carlton, 1979	Introduces the first econometric model for establishing the city's ability to attract FDI.

Explaining how cities are nowadays "commercialised" in a country or the world do not differ too much from the traditional marketing for products and services. The four P's or marketing (place, price, product and promotion) remain at the core of the process and developing them in the framework of cities provides a clear understanding of what it really means and contributes more to the understanding of the concept of "marketing the city" and its relationship with attractiveness.

### *Place*

As any other product, the city tend to have a natural market for certain activities and in this form, there are specific kinds of investors and people willing to be there if proper conditions are granted (Zhao and Tong, 2000). For instance, The Mexican Border States have for natural market investors from the American Border States due to the "maquiladora programme". The rationale is wages are much lower than those in America and there is also opportunity for American executives to work in Mexico and to live in the U.S.A. without travelling more than 30 minutes every day. Then,

promotion of local authorities will be concentrated on the U.S.A. and not in other Mexican areas, besides geographically they are closer to U.S.A. than to other important cities of Mexico.

Yet, a place has a desired market targeted by authorities in their effort to generate growth and as a part of a broader strategy to enhance the economic level. In this case, authorities focus their efforts in persuading companies of a certain kind or from a specific industrial sector that they can provide the competitive advantage that are looking for.

As conclusion, the concept of “place” deals with the market or markets where the city can be promoted amongst investors and people.

### *Price*

Any city embarked in marketing efforts will allocate a “price” for its services. The same logic as in any other product applies: the less the price and the better the quality, the more likely to be purchased. Cities are not the exception and the price traditionally charged for their services is taxes. The Globalisation process has lead governments even to pay in order to bring companies to their territory (Dicken, 1992). The way they pay is by giving out land, railway connections, training programmes, new motorways, etc., specially designated for the firm. It is clear that “price” for cities has no relevance and it could be said it is negative due to the incentives, which in real terms, have a cost and many times above the exerted investment.

### *Product*

By “product” it is understood what the city offers to the public, tangible and intangible. Infrastructure for sending products to the local and external markets, availability of skilled people, research and development centres, office space, amenities, financial institutions, large stock and affordable housing, just to name but a few tangible products of the city.

Business culture, people’s attitude towards business, climate, are just some of the intangible factors affecting the whole set of characteristic of the product called “city”. Portraying a city as a set of tangible and intangible attributes would be rather

simplistic but it is also a reality that this is just the traditional marketing definition to conceptualise it in academic terms (Kotler et al, 1993).

### *Promotion*

All the communication efforts to show the city and its attributes to a public so as to persuade it about something are contained in the definition of city promotion. The city (represented by its authorities) becomes an entrepreneur intending to encourage firms and public investment to locate in their areas of influence (Hayter, 1997). The city is an entrepreneur because takes on the responsibility of looking for clients by promoting its “products”, like incentives, infrastructure and other mentioned before. But targeting specific markets implies competence with other cities with the same objective. Henderson and Morgan (1999) argue that place marketing and investment attraction are the only modern economic mechanisms to start an economic development process without any of the undesirable side effects (inflation, immigration, high population density) of the central government’s artificial strategies

Despite the fact that marketing a city is a very effective way to attract investment by changing the image and physical aspects, it is just a part of the elements producing economic development. The four P’s of marketing provide a guide to appraise how attractive for investment and people a city is, but by no means is the answer to design a strategy to create the “perfect place”.

### **3.2.2 Industrial location theory**

Industry location problems have been well covered in the last two decades (Aikens, 1985; Francis et al, 1983; Jakobsen, 1990). Industry location theory implies *per se* the investor’s perspective, where maximising or reducing costs is the core of the analysis. It is based on mathematical models or algorithms to solve questions such as where to locate a branch plant, what is more profitable whether expanding the existing plant or building a new one, where to locate a warehouse and how many of them are required, etc.

Hormozi and Khumawala (1993) argue that there is a concern amongst public and private institutions to assess places for the location of plants, warehouses, schools, radar stations, etc. This concern deals with the relevance of the investment and its



impact on the community where it is to be located. Therefore, the location process starts affecting cities since the moment the investment either by a private or public institution is announced. The place receiving the investment is expected to improve its current economic conditions through the generation of more employment and the spillovers generated by the investment.

The traditional location problem involves the location of a warehouse/factory to supply to different markets or just one in some cases. The central point of these kind of problems is to minimise the transportation costs and time (Khumawala, 1972). Cities are evaluated in terms of their industrial and telecommunications infrastructure and the availability of raw materials mainly. Indeed, local authorities invest most of their resources in infrastructure projects like new airports, industrial parks and motorways, among others.

It is important to mention that this optimization approach could not be useful in the new knowledge sector also called the “new economy”. For those companies in the new economy, the traditional location factors seem less relevant since the “products” of this industrial sector are intangible. The location problem thus becomes more complicated and in many cases there is no minimisation or maximisation exercise able to provide an optimal solution. Knight (1995) claimed that cities are retaking their new role as centres of knowledge, redrawing most of the traditional location paradigms where qualitative aspects are more important than quantitative one. Companies in the culture industry will not care too much about infrastructure or training centres. Instead, they will look for places with accessible telecommunications systems fashionable local attractions such as important theatres, broad band services, to name just a few. Software development companies will look for quiet cities with a good university focused on engineering courses while amenities will play an important role in the decision making process.

Knight (1995) also sustained that even though more cities are moving toward the attraction of companies in the knowledge sector, it is evident that many of them will remain manufacturing oriented for a long time, due to the fact that a great proportion of their economic revenue is generated by this sector. Cities are still trying to create their image and to define the most adequate industrial sector according to their

comparative and competitive advantages. Therefore, is not possible to discard the fact that for some cities, manufacturing activities will be the “optimal” solution, provided a set of conditions are established to avoid environmental damage.

Owen and Daskin (1998) in their seminal paper about the main paradigms in industry location argue that there are basically three types of formulation for facility location problems:

1. Static and deterministic.
2. Dynamic.
3. Stochastic.

#### *Static and deterministic problems*

These problems are called static because quantities are fixed over time and there is only one solution to be implemented. The output variable and the criteria for optimisation are always set up by the decision-maker (Owen and Daskin, 1998). The objective is to decrease time and distance between the production centre and the market. Nevertheless, there are various constraints in the system producer-customer to be taken into account to decide the best place. Location theory was the first technique in identifying those constraints and setting them up in mathematical equations able to help decision makers to select the best place for a facility (Owen and Daskin, 1998, p.425).

As manufacturing processes became more widespread amongst various localities and even countries, and products had to be “tailored” to customers’ preferences, the need for modelling the transference of semi-final products and raw materials, has made evident the necessity for dynamic models able to portray time aspects of products and different size batches in manufacturing. The answer to this was provided by the dynamic problem analysis.

#### *Dynamic problems*

Many of real life problems face a substantial burden of uncertainty, either by the supply side or by the market. The location of a plant or a warehouse implies a large investment and so that facilities are expected to have a long time horizon (Badri,

1999). There are two other important factors to be answered by dynamic models: the changing demand over time and possible expansions and relocations of the same facility. These models considered mainly time as an important factor for changes and different production levels as a solution for changing demand (Badri, 1999). Time was taken as discrete in order to simplify the mathematical process.

Traditionally dynamic problems have two kinds of models: single facility location and multiple facility location. The former focuses on finding a solution for optimising over a time horizon, the place for a facility or warehouse. The latter looks for optimal points along a geographical space to attend a specific demand in different markets and production centres. The complexity relies on the issue that not all the facilities are built at the same time and consequently, finding the timing for location adds more risk to the investment.

#### *Stochastic problems*

So far, techniques covered in the current section try to locate facilities over a delimited time period and in optimal manner. Stochastic models add more of the real life complexity because they assume “any number of system parameters might be taken as uncertain...The objective is to determine robust facility locations which will perform well (according to the defined criteria) under a number of possible parameter realizations” (Owen and Daskin, 1998; p.435). In this way, probability functions are included as part of the parameters providing the decision-maker with more realistic values and data for selection.

The most difficult part to solve in these models is how to determine probabilities for each parameter without been too optimistic or too pessimistic. What is more, the combination of too many probabilities in the model might turn it into something with a lack of credibility (Current, et al, 1997).

One again this technique presents the same structure as the previous ones: there is a primary objective subject to a series of constraints or events, where each of these has a probability and a time to occur (Current et al, 1997). It is similar to simulation techniques but the difference is that the model is intended for only one result-at-a-time.



### 3.3 Marketing the city and industrial location and their role in LED

After revising some of the most important strategic location models<sup>1</sup>, the question of its impact on city attractiveness arises as a logic consequence and there are quite a few justifiable answers. Firstly, the market topic where large cities are obviously more attractive than small ones for mass production companies. Nowadays, the fight for capital is broadly centred in attracting multinational companies because they hire large pools of labour, use the services of other local companies, are expected to train people, to pay higher salaries and wages, to name just a few of the economic spillovers (Dicken, 1992).

This argument is supported also by Moomaw and Shatter (1996) who found that urbanisation and population are linked to economic development. They argue that “as markets grow, the division and specialisation of labour increases. This places a premium on physical proximity to reduce transportation costs and often increases the importance of face-to-face contact to reduce communication costs” (p.14). Therefore, companies prefer to locate close to large cities

Secondly, there is an intrinsic political factor intervening in the location process. Those cities receiving any investment will look as “attractive places” and will use this as a flagship for promotion (Brasset, 1994). Local authorities can demonstrate their ability to promote investments in their places and they will have better economic indicators when central authorities appraisal their performance.

Thirdly, when companies assess a city to locate a company, many expectations at different arenas are triggered off. For example, at social level, the opportunity for having more and better paid jobs; for politicians, the opportunity to be at the “shop window” where citizens can realise about their abilities; for central governments, it also represents a relief in terms of money transference due to an increase in the money flows available to local government through taxation both to employees and firms. Real estate markets react increasing prices and land value almost automatically just after rumours of a company locating near by (Marionni, 1998).

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<sup>1</sup> For a more detailed explanation of models in location theory see Brandeu and Chiu, 1989.

Fourthly, location theory evaluates time span concepts. This provides an idea about the social, economic and political stability of a place. The simple process of being nominated in a selection process represents for cities a good compliment and an indicator of the local authority's performance. In terms of probabilities, stability also represents a good point for forecasting because unpredicted events have almost zero probability and consequently a category of "stable cities" are preferred over those with more volatile expectations (McCann, 2001).

Finally, looking at the whole process of economic development, the assessment process implies the inclusion of other companies and institutions involved in the economic evolution of the city, making almost mandatory the design of competitive strategies by local authorities to compensate possible weaknesses of particular organisations.

To sum up, it can be concluded that location theory is another way to understand the concept of city attractiveness. Under this approach, the city is seen as input for a whole process of part of it and local authorities are responsible for keeping all the economic elements aligned for helping companies to maximise profits and minimise costs.

The economic differences and the uneven development amongst cities have forced local governments to look for ways to evaluate those factors affecting their capacity to deliver better economic conditions for their citizens. Owing to the fact that the resources are limited and the needs of the population are unlimited, governments must be selective to assign resources to solve the problems by prioritising needs and their impacts on people. There are two basic questions for local governments when designing LED strategies:

1. What stage is the city in the development process at?
2. What level of development is achievable under the present conditions?

These questions determine and constraint the ability of governments to improve economic and living conditions in any city. As a result, there is a need to determine how a particular city performs both against itself and against other cities and what the

possibilities are under a specific framework established by central government policies and by the economic resources available.

Wong (1998) develops a typology of local economic development factors throughout an extensive literature survey. Table 3.2 shows the complete list of factors referred by Wong in her paper. She divides the factors in “traditional economic development factors” (1 to 7) and “intangible factors” (8 to 11) giving no explanation for the unbalance between the two categories.

**Table 3.2: The Wong’s Local economic development factors**

1. Locational factors
2. Physical factors
3. Infrastructure
4. Human resources
5. Finance and capital
6. Knowledge and technology
7. Industrial structure
8. Quality of life
9. Institutional capacity
10. Business culture
11. Community identity and image

Source: Wong (1998).

Nevertheless, there are two points deserving further discussion in Wong’s posing: firstly, the possibility of categorisation, whether all the factors are subject government command or not. Secondly, the opportunity for developing particular indicators associated to each of the factors. The rest of the chapter draws upon these two issues providing theoretical evidence in both cases.

### **3.3.1 Splitting the factors: attractiveness and competitiveness**

Table 3.2 can be separated in two parts: those factors belonging to attractiveness and those belonging to competitiveness. The former, according to Serrano (2000)<sup>2</sup> deals with factors under local or regional government control. It is assumed that authorities can influence the outcome of a factor, either positively or negatively. In the latter,

<sup>2</sup> A brief discussion of the main differences between attractiveness and competitiveness is presented in p.20. However, for the purpose of this research, it assumed that attractiveness factors can be deliverable (in certain ways) by local authorities in order to improve their apparent economic, social and environmental conditions.



government does not have much bearing on the performance of the factors rather the conditions are set up by the economic agents interacting in a specific geographical space (Serrano, 2000, p.14).

To exemplify both concepts, take the example of quality of life and business culture. Quality of life factors are considered traditionally within the category of attractiveness owing to the government’s capacity to influence variables representing the factor such as hospitals, parks, museums, and other amenities. Governments can improve these indicators by investing more money on them. In the case of business culture, which is a competitiveness factor, governments cannot influence directly the performance of the factor and its indicators. It is clear that business culture is more associated to entrepreneurs and their activities in the city: how they interact between each other, the competitive level of suppliers, their participation in social life, the link between companies, regional integration, and so forth. Table 3.3 presents the factors associated to competitiveness and attractiveness according to the raising presented previously.

**Table 3.3: Attractiveness and competitiveness factors**

Attractiveness	Competitiveness
Locational factors	Infrastructure*
Physical factors	Human resources
Quality of life	Finance and capital
Institutional capacity	Knowledge and technology
Community identity and image	Business culture
	Industrial structure

Source: Elaborated with data from Wong (1998).

\* Infrastructure is traditionally considered a competitiveness factor, even though it can be argued that part of the infrastructure in a city is directly under government control and consequently, it could be considered a factor of attractiveness too.

The definition of each of the factors as well as the justification will be provided later in this chapter and in chapter four, where the concept of competitiveness will be defined and discussed. However, it is relevant to mention that some other factors will be envisaged in both categories where scholars consider an overlap.

It can be inferred from table 3.2 that economic-related factors (i.e. market and economic conditions, income distribution) are missing and it is clear that the competitiveness of a place is highly influenced by such factors. The role of

government is another factor not covered by Wong (1998), though it must be said that some part of the government functions could be included in the factor of institutional capacity.

Vittal (1998) argues about the impacts of new communication systems, trade liberalisation, the expansion of education in most countries and the decline of agricultural activities and the rise of services as the motors of new economies. All this is connected to the concept of globalisation and its impacts on the development of cities. His arguments challenge the traditional urban theories: central place, regimes and growth machines, class and race politics, rational choice models and patronage and clientelism (p.3). Most of these theories, he argues, have lost power to explain modern urban phenomenon inherent to modern life. They are unable to explain why some cities are more attractive than others for investors. Moreover, they do not provide any insight about explanatory models of city competition.

Central place theory cannot explain anymore why some companies locate where they do (Kresl, 2002). New communication technologies have increased closeness between producers and customers even when the producers are located miles away. The idea of “virtual markets” has also transformed the cities and none of the approaches listed before cover this new issue. Since companies can now exist without having a physical space, the growth machine concept applied in America is losing validity owing to new ways of economic transactions, virtual companies do not need special concessions in the physical world because they do not have physical problems for accommodating into the urban context (Vittal, 1998).

Specifically in the case of city attractiveness, Kresl (2002) remarks the importance of local governments in generating opportunities for the population. The idea of authority just distributing central government’s resources is now out of date. The new paradigm forces cities firstly to be in the world scene (Sassen, 1991) and secondly to generate their own resources. In this way places will become more attractive for people and companies. It is evident, Clark argues, cities need to be more creative since the simple strategy of providing incentives is not useful anymore because “competing localities offer similar incentives” (p.7). Wong (2000) and Clark (2000) share the notion of a new and more active role for local governments, not just as

administrators but also as promoters of their cities to beat the intense competition for resources either public or private.

Philo and Kearns (1993) considers amenities as the core element for city attractiveness and how this is relevant for the economic development process in modern cities. The central point for making the city more attractive is the construction of amenities-related infrastructure like bicycle paths, museums, and stadiums, to name but few. He also argues that festivals and other cultural activities help to improve the good perception amongst people about a city. Moreover, the city is perceived as a place for something else than just a place for working, as in the case of the traditional industrial city. For instance, every day more people select their city of residence often before or simultaneously with their job selection.

According to Knight (1995), culture should be regarded as another factor to attract both people and capital. His assertion is that cities have a particular culture appreciated by many people who are now looking for amenities related to the city and not the traditional amusement park that has become a commodity in the global paradigm. Successful cities in the new Europe will be those able to keep their local traditions and own culture without the pollution of the globalisation for traveller tired of the cities crowded of the standardized culture.

In the theory regarding city attractiveness, the role of politics is considered a central element to induce growth and development (Maillat and Schneider, 2000; Wong, 1998). Unfortunately, politics at city level are driven by unpredictable factors affecting the country or even by at-the-time facts that policy planning becomes difficult. Incentives for companies can be planned in advance but the effect on business and the capital stock market by politicians giving “comments” about present or future events cannot be quantifiable (Carr and Feiock, 1999). Attractive cities need smart politicians capable of communicate messages leading to certainty rather than confusion if companies are to be settle in the place for long time.

Globalisation has forced city authorities to redefine their political actions in order to avoid problems of misleading communication, which can be interpreted incorrectly by the economic entities in a place (Carr and Feiock, 1999). A new tradition emerging



amongst politicians is not to produce messages or communications if there is a chance the information can be used or interpreted in different ways by the same kind of organizations. This is considered as a source of “political noise” in the strategic planning of companies and other entities, which in the long term will prefer other locations with less “noise” and greater stability.

Attracting inward investment is a very competitive process at any government level (Post and Stein, 2000; Precedo, 2000; Mawson, 2000). The problem for cities is that working on the attractiveness side does not assure the attraction of more companies or the enhancing of economic conditions, but at least, improves the chances of being successful. The highly competitive process for public and private investment, where all places are embedded, forces cities (or local authorities) to be creative in order to provide some kind of competitive advantage for firms. Thus, the concept of city competitiveness emerges as another important factor in the urban economic development process.

### **3.4 Government approaches to attractiveness: their relevance in the urban context**

The new competitive way to distribute economic resources amongst cities, the specific requirements of each place (according to their level of economic development), intended long-term goals, industrial base, local culture, amongst other reasons, force governments to structure in a hierarchical manner the different combinations of resource allocation. The aim for local authorities is to deliver to their citizens the maximum benefit with the available resources (Hood, 1991).

Making the city more attractive is a priority for governments in declining economic places. However, making cities more attractive can be controversial because when local governments invest in attractiveness factors “something else” will be left aside or not concluded. Thus, the relevance of establishing priorities emerges as a big issue in urban economic development and it relies on how to allocate the scarce resources for making the city a better place for companies and people with certain characteristics. What is more, cities with low unemployment rate are also immersed in attractiveness strategies to diversify the kind of companies wanted for the future.

Information from diverse sources (like academic journals, books, people interviewed and newspapers) suggests that attractiveness factors are managed by local governments according to the following criterion:

1. Trends and management fads.
2. Political tendency of the party in government: right, centre or left.
3. Condition of the economy.
4. Central government directions.
5. Competition among cities.

#### *Trends and management fads*

The ways cities are managed are subject to styles and managerial systems according to the “best” practices explained by gurus and academics (Hood, 1991). Governments, at any level, have seen the emergence of technocrats as the leading political class. This has produced a trend to create what is call “the professional politician”, coming from the private sector with maximisation and profit concepts well and deep assimilated in their subconscious. Strategies to make cities more attractive will be based on factors oriented towards the maximisation of economic return and the evaluation of assets (Peck, 1995).

Management fads like total quality management (TQM), management by objectives, reengineering, management groups, just to give some examples, have been implemented in central and local governments to improve the performance and the service delivery (Pollit, 1988). These ways of doing things determine the way cities are promoted or even no promoted (like in the case of San Francisco or Chicago with the policy of “growth control”).

#### *Political tendency of the party in government: right, centre or left.*

The level of government participation in economic activities is highly regarded to its position in the political spectrum (Newman and Thornley, 1997). Right-wing parties are supposed to leave the economy to the market forces and they are in favour of no intervention at all, whereas the left-wing parties, in modern times, prefer to regulate the economic activity in order to avoid possible damage while the market forces

adjust. Centre parties are a mix of both tendencies and adapt their strategies to the requirements of the political momentum (Peck, 1995).

Therefore, left-wing parties would support policies to attract companies without giving out economic incentives in cash, because these resources must be used to solve public requirements and social needs more than to increase capital stocks (Young and Rao, 1997). Incentives such as training human resources and building infrastructure are considered as possible incentives to companies because these remain in the place in case the company goes out in a near future. Also quality of life elements are highly promoted to attract investment in cities where left-hand parties rule.

The opposite view is provided by right-wing parties commonly visualised in the theory of “growth machines” and in the U.S.A. Local governments have to provide all the incentives and conditions to help companies already working in the place and those who will, to growth. The central idea is that making the companies grow will make the city grow too. The spillovers will permeate to all the entities in the economic system: grow means, according to this approach, more tax collection, more employment and consequently more expenditure by both population and authorities (Maillat and Schneiter, 2000). To identify the most common incentives for this approach could prove to be inaccurate because local authorities can use any element available to persuade companies to locate in their areas, ranging from free land and tax exemptions to training and building ad-hoc infrastructure like high voltage electrical transformers, access to motorways, plant facilities, amongst others. It must be emphasized in this perspective, companies are entities in charge of making the economy to move, in a few words, local governments work to enhance the competitiveness of local business and they exist to promote investment in any areas that enhances the opportunity for growth.

Centre-parties look for a combination of ideas where the market economy must be regulated in order to avoid unbalances or shocks that could cost too much (for governments) in terms of recessions, unemployment, etc. Traditionally, the strategy for centre parties is to provide incentives, whatever they are, to companies aiming to hire large pools of labour or specific sectors already targeted as a part of a broad strategy for the government in the long-term making it more selective when granting



the incentives (Danson, 1998). This approach envisages the notion of local authorities as “mechanisms” to build better conditions in cities. Due to the fact that cities compete for investment and resources, it is necessary to create incentives to attract those companies with potential to improve the economic and social conditions. However, not everything is left to the private sector, as in the case of the right-wing parties, government is responsible for control in areas like environment and politics because in these aspects the notion of maximizing does not apply and a “neutral” entity has to be in charge.

Common factors to promote investment associated to this kind of government are skilled labour, infrastructure available, the reliability of suppliers and political stability, which is considered the flagship of centre governments referred to the belief that in places managed by this kind of political parties there is no conflict due to the combination of the best concepts of both ideologies in just one political group (Danson, 1998).

#### *Condition of the economy*

Some cities face the declining of their economic activity while others are experiencing prosperity. The context of a “poor economic performance” is more than enough for governments to start analysing attractiveness factors in order to reverse the situation. The lack of economic resources, classic of declining economies, pushes local governments to select attractiveness factors not needing cash investment in the short term (Figlio and Blonigen, 2000). Hence, to persuade companies to locate in their area, authorities promote factors such as large availability of human resources (consequence of high unemployment rates), government support (understood as to allow companies to do what they want), availability of space (due to large derelict areas) and low level of competitiveness in the local market (there are no other companies willing to invest).

#### *Central government directions*

Countries around the world have specific guidelines regarding their economic performance for both the long and short term. Owing to this fact, city authorities have a broad pattern to follow in order to achieve national goals like low inflation, more

employment, social justice, less corruption, so forth. These guidelines constrain the city's ability to design its own strategies and goals because they can be in conflict with nation-wide objectives or policies (Stocker and Young, 1993). For example, a city close to the border with other country requiring more labour could not hire people from the other country if national policies limit the number of immigrants.

### *Competition among cities*

The competitive processes where cities are immersed force them to develop distinctive capabilities to create competitive advantages against other regions. The final objective is to look more attractive for investors and entrepreneurs to generate more opportunities for local population. Competition between cities is nowadays a common practice to obtain resources from the private and public sector. Even resource allocation by central governments, in some countries, is carried out under competitive basis, where the supposed best projects obtain the grant. Such competition involves the development of specific factors by local authorities to convince people, firms and the public sector that city A is better than city B not just to work but also to live and to enjoy the benefits of modern life.

To attract investment cities have to compete with other cities in the global arena (Sassen, 1994). What factors are to be promoted is still the question for local authorities, which have limited resources. In one way or another, the majority of cities have the same stock of variables to offer to their market, but what is important is the way these factors are combined to produce a characteristic not replicable by other places creating the so called "place image" inherent just to one city. However, the search for this image can take long time and resources.

To sum up, what factors are used to promote a city depends largely on the political party ruling at the moment. For instance, right-wing parties have been traditionally business supporters (even more of big companies) and their strategies are based on three aspects: economic incentives, laws to reduce union activity and a reduction in taxes. In the case of left-wing parties, they have focused their promotion strategies on a fair competitive environment and incentives for small companies.

As relevant as the past argument is the fact cities belong to a suprasystem called nation where some regulations and policies have to be followed by local governments, reducing their capabilities to compete against other places in the same country and outside it. And as usual, the city budget also plays an important role in the limits for developing factors to promote investment.

### **3.5 Selecting variables to represent attractiveness in the LED context**

Despite the relevance of urban resources in the local planning process, there is not a list of critical factors clearly identified in the academic journals by scholars (Steiner, 1990; Wong, 1998; 2000). Moreover, the factors used recently in urban models represents just one factor and avoid the inclusion of many of them, increasing doubts about their capability to provide useful information for practitioners and decision-makers (Precedo, 2000). The argument provides a justification for developing a more robust model including variables associated to social and political issues, central arguments in the discussion of local economic development. As the objective of this thesis is to prove that attractiveness and competitiveness are central elements to portray local economic development amongst a group of cities.

This section presents a set of possible factors describing the city's ability to attract investment. The objective of these descriptions is to justify their use as indicators to describe how effective a city is and how to bring direct investment to its region of influence. For each kind of industry and company the importance of each factor should increase or decrease, depending on the core operations. A textile company would probably require low skilled workers but in large numbers, while a telecommunications firm would need engineers and highly skilled workers.

The argument starts dealing with the notion of control and the capacity to influence the value of certain variables. Under the perspective of this research, it is assumed attractiveness variables can be deliverable (in certain ways) by local authorities in order to persuade companies and people that they are "the best option either to invest or to live".



### 3.5.1 Local promotion activities

Promotion and societal welfare are aspects mentioned by Paddison (1993), citing the work of Van der Berg (1990). In this case, Paddison argued that local authorities, Regional development agencies and Local economic councils are looking for ways to enhance the “competitiveness” factors in the area, where promotion activities are the core of the effort. Paddison (1993) also claimed that a good indicator of attractiveness is the number of visitors to the city, even when the city is not marketed as a tourist place. Somehow, this could be interpreted as an index of how interesting a city is perceived by external publics.

Urban regeneration programs and the redesigns of city image are other kinds of place promotion but without the label of “marketing the place” (Ashworth and Voog, 1995). They argue deprived cities want to attract the attention of the external public to tell them they are “new cities” with new advantages over other places. Nevertheless, this strategy has not been very well seen by cities within the same country because it produces a direct competition among them. Immigration of high skilled people to the “new town or cities” is a fast response to these strategies, even when in some cases the new towns do not have employment for new residents.

The goal of any government’s strategic plan is to mobilize local resources, to create an effective structure for their interaction, to precisely identify an end objective, and to give specific tasks to each of the relevant entities. Local governments are promoters of their regions to attract investment (Bradley et al, 2002). In the case of Regional development agencies and other non-government bodies, their goal is to promote the place in any way that people with money and capital converge to generate more economic revenue for both citizens and governments. Therefore, promotion has been seen as the best mechanism (if not the only one) to attract investors and few effort, if any, has been done to improve the business facilities of cities or in the general the business environment.

Myers-Jones and Brooker-Gross (1994) sustain the hypothesis that newspapers play a very important role as mechanism to promote places. Firstly, they are the means by which different publics obtain recent information on how a city is performing in the competitive league, for instance television and increasingly Internet. Secondly,

newspapers provide a platform to evaluate the real image of the city because journalism is supposed to be objective. Moreover, newspapers provide different perspectives about the same project. The number of local newspapers and radio stations in some cases, are very good measures of the social and economic environment. The authors conclude their argument stating newspapers are the “barometer” of cities either in economic or social issues.

The use of internet is another form of promotion with a relatively low cost and high exposure, provided the website is also promoted sufficiently amongst the target market. Urban (2002) claims that webs serve as a tourist information office, town hall, business directory and a shopping mall to expose cities to possible visitors and investors.

Critics of “promotion activities” argue that this factor has been overused by all organisations responsible for economic development. The reason is the low cost it represents and its accountability. In the former promoting what the city already has is cheaper in many cases than solving the problem. In the later, it is possible to assess the effects of what has been spent to promote the place and the number of new jobs created, for instance.

### **3.5.2 Quality of life**

Quality of life can be defined in terms of housing, health, education and leisure facilities available for a population in a certain place. “Quality” depends on the combination, costs and accessibility of these resources (Sagedy, 1997). However, a strict definition of this concept does not exist because each country may have different needs and some authors (Sagedy, 1997; Rich, 1997; Cushing, 1997) argue that a “real definition” depends on how a city or a country solves the main needs of its inhabitants. Therefore, a city in a developed country should consider how to improve the health system, while a developing country should consider how to provide health facilities. In the long-term, cities and companies must work together to improve social welfare through partnerships and common policies in order to enhance the competitiveness of the region (Wong, 2000)

Urban amenities are aspects of human society that can only be realized in cities-places in which there is a sufficient aggregation of people to support a variety of diverse services. The provision of “high culture” (museums, orchestras, opera and dance companies, galleries, and other performance exhibition spaces) ranks high on this list. All these are important because of their effect on the local labor supply.

Van den Berg and Klaassen (1989) argue that with modern transportation and communication, firms have access to virtually all cities and towns for their plant locations and that this “calls forth greater economic competition among the towns”. As a consequence, local authorities need to develop strategies to supply good quality housing, shops, and cultural and leisure-time provisions if they want to increase their attractiveness level.

Home ownership is becoming a very important indicator of the cities’ attractiveness (Gold and Gold, 1994; Brownill, 1994). It provides notorious information about indirect indicators (and direct indicators as house price inflation). These authors clearly associate housing topics to a broader factor called quality of life appealing to it as the most important element to be promoted by cities to attract high skilled people and corporate offices.

### 3.5.3 Urban market

Each city has a determined level of economic activity, where the market forces converge to establish an equilibrium point (DePasquale and Wheaton, 1996). Consequently, economic activity is constrained to that point, but not necessarily, all the economic entities in the market will work at that level. Urban areas hinge on local and external competence, and are affected by exogenous factors at country level. Cities inside the same country have different inflation (different food prices, different VAT rates according to the city, different house and land prices) and employment rates, affecting the consumption of the local population.

Large populations are still attractive conditions for many local and international companies because some of them depend on large volumes to be profitable, such as retailers, commodity-sellers, petrol stations, supermarkets, among others. For these companies large populations mean large markets (Philo and Kearns, 1993).



Another important point, when someone is referring to attractive markets, is the purchasing power of the market. Workers receive a quantity of economic units to cover their basic diet requirements as well as other needs. It has been demonstrated in the economic theory that cities within a country have different price levels for the same range of products. Cities where salaries are higher would be attractive for people but not for companies (Thrift and Glennie, 1993). The stratification of wages and salaries among a population is also a factor of attractiveness for companies. Sometimes, cities with not a very high average income per capita, could be even more attractive than other city with higher average income per capita.

### 3.5.4 Government

Hayter (1997) argued that government affects, at different levels, the choice of companies' location within a region. Governments have the ability to give tax exemptions and grants to companies. Sometimes the incentives are roads or highways close to the new factory. There are two ways local governments can influence the location decisions (Hayter, 1997). Firstly, by local economic policies, and secondly by direct incentives.

In the first case, policies are designed to improve the whole economic system, not only to incite companies to come to the region, but also to encourage the local economy to achieve pre-determined goals and objectives<sup>3</sup>. The whole set of economic entities in the region is expected to benefit with the implementation of such policies.

In the second case, a specific company receives some kind of "incentive" for location. These incentives are designed specifically for each company according to its requirements to enhance its "competitiveness". One problem arises from this kind of government participation: the distortion of the industrial organization due to unfair distribution of physical and economic resources. Companies, which rose from local entrepreneurs and grew, now face unfair competition from "outsiders" due to concessions granted by local authorities (Paddison, 1993).

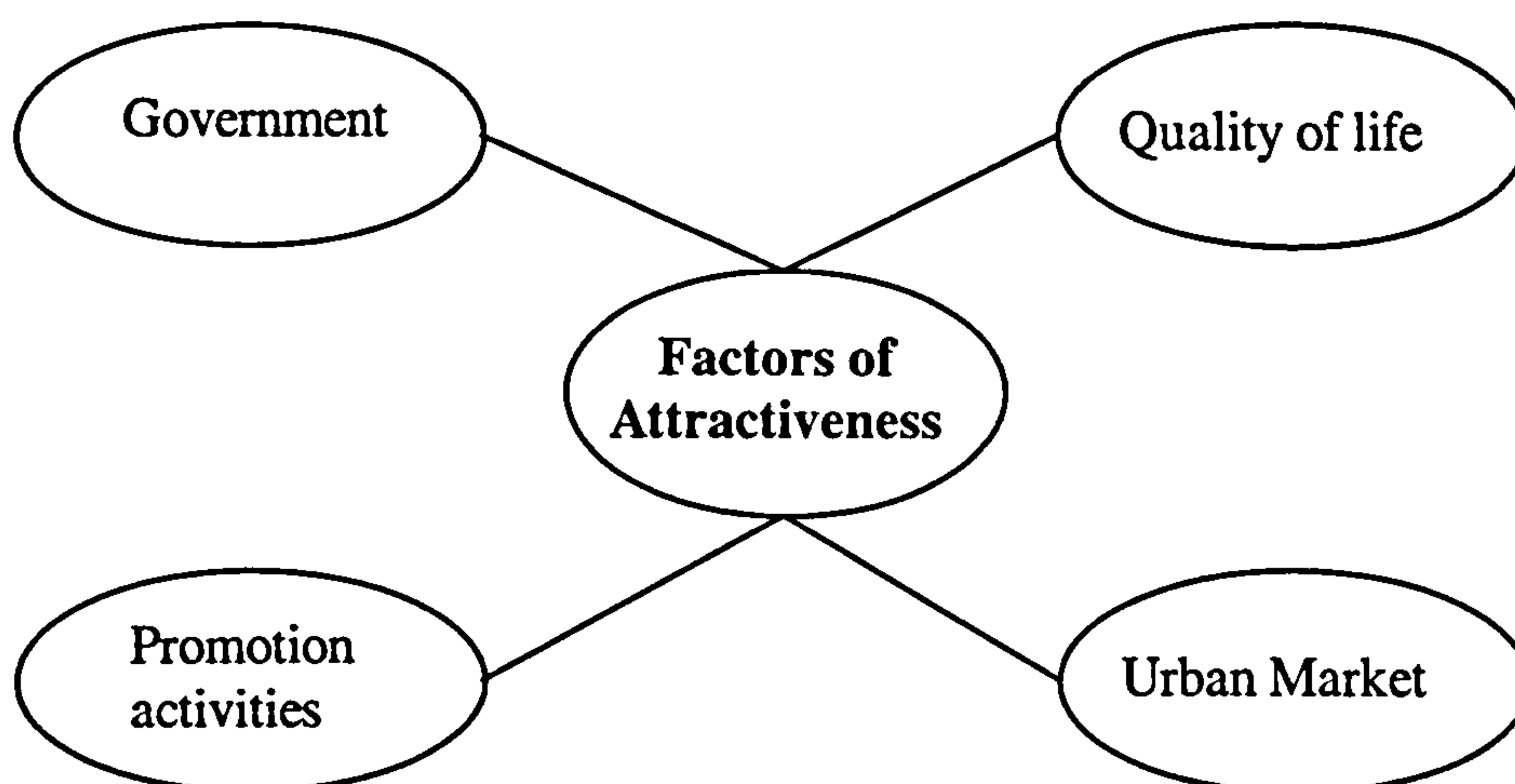
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<sup>3</sup> Such policies are supported by the notion that in the long term there are no diminishing returns to capital between regions (Endogenous growth) and regions and cities have to do something to attract capital (Thirlwall, 1999).

Shachar and Felsenstein (1992) stressed the importance of local government and its initiatives in the formation of new firms. They warn that if the central government takes on too many functions, the local government is seen by business as little more than a taxing agent and as detrimental to their success and growth. The crowding-out effect explains this kind of economic disturbance in a broader sense.

Another important indicator mentioned by Ashworth and Voog (1995) is the local government's commitment with urban programs and support to entrepreneurs in new ventures. Examples of good projects becoming a complete failure due to a lack of government participation in regulating unfair competence are presented in their research. They also say that in occasions, in order to attract large companies for massive employment, local governments provide incentives that damage small companies competing in the same market with the large ones. A proposed indicator for this factor is the number of local initiatives (measured in economic units) to support large and small companies as well as the number of cases claiming unfair competition among companies. Figure 3.4 summarizes the factors of attractiveness covered in this chapter.

**Figure 3.4: Factors representing attractiveness**



### **3.6 Final comments and introduction to the concept of competitiveness**

The aim of this chapter has been to examine some literature regarding the concept of attractiveness and what variables could represent the concept in terms of an economic

development perspective. Special emphasis has been place in the establishing the links between attractiveness and LED. It has been demonstrated the role of city attractiveness to move forward the local economy in order to provide better conditions for the inhabitants of any place. It could be seen that attractiveness is not just promoting efforts to attract more investment, it is a more complex term explaining various interactions between institutions at local level, to achieve a higher economic level to provide citizens with more resources. It was also evident, that the attraction efforts of cities are immerse in the circular cumulative process of LED, as the one defined by Kaldor and Myrdal.

However, is was claimed by some of the scholars revised, that attractiveness within a LED framework is highly linked to competitive process providing an argument for including theory and variables related to competitiveness in the city context. Chapter 4 deals with the definitions and discussions about city competitiveness and the different approaches taken by the most relevant authors in the area.



# Chapter 4

## Competitiveness and its role in LED

### Introduction

The aim of this chapter is to review the main definitions and models of city competitiveness and how they are related to the local economic development process. It is hard to deny that cities must face competition for public and private investment if they are to increase their opportunities in order to improve the quality of life for their inhabitants.

The current chapter also presents a series of propositions explaining why competitiveness should be a driving force for economic development. In order to achieve the objective, competitiveness and attractiveness are contrasted to demonstrate the differences between both and the role played by each concept as a driving force in the theory of urban economic development.

Emphasis is placed on “who” or “what” makes cities competitive to understand the contemporary paradigms in the field, and the methods used to assess the meaning of city competitiveness.

Finally, since the competitive process is dynamic in time and spatial aspects, the conclusion provides a new definition integrating the new characteristics of competitiveness according to the literature surveyed.

In the whole research, this chapter intends to provide a justification to include variables of competitiveness into an urban economic development model. The contrast of competitiveness and attractiveness serves as fundamental to prove that there is no high correlation levels or reciprocity between both concepts, reducing the risk of low statistical representation of the final econometric model.

#### 4.1 Defining “city competitiveness”

The origins of the theory can be traced from two basic aspects of economics: trade and competition. Nevertheless, the theory has allocated strong emphasis in the analysis of countries rather than cities, but more recently the interest of scholars shifted to the urban level because cities have assets which are different from those of countries.

Since the 1980s various international organisations have been working to develop a concept of competitiveness as well as a model to assess it at country level, probably due to the fact that data at this level are easier to compare. The most well-known organisations working in the competitiveness field at national levels are The International Institute for Management Development (IMD) and the World Economic Forum (WEF). The former defines competitiveness as an ability to direct companies in order to exploit the competitive advantage of countries (IMD 2000), using the resources available in the best way to encourage productivity and economic growth in the countries. For the WEF (2000), competitiveness is the ability of a country or a company to generate more wealth than its competitors in a world market.

The Organization for Economic Co-operation and Development (OECD) establishes that competitiveness is the level where a country can produce goods and services with perfect market conditions, facing successfully international competition and helping the population to increase their real income in the long term.

Despite the fact that the last definitions are general and could reflect also competitiveness at city level, they do not encompass accurately the characteristics of a city in terms of their economies and policy development. Besides, cities are now the target of analysis and research because global companies (or international companies) bargain directly with local governments. Yet in many countries like Spain, France and Germany, to name but a few, the responsibility to “generate more wealth” is on the local government’s hands owing to a transference of power by central to local governments. At the company scale, it is accepted that firms are heavily affected by the surrounding environment prevailing in the local milieu, but in general, what do cities compete for?

1. Mobile capital. Cities try to maximise the level of entrepreneurship to create employment and alleviate poverty.
2. Competition for people, whom represent income through taxes and votes in the political arena.
3. Government assistance for economic regeneration. Declining cities need money to regenerate their local assets.
4. Hallmark events, which represent a source of income for different industrial sectors of the city.

Kresl (1995) argues that cities are becoming more important as “economic actors” because companies now bargain directly at city level, rather than to national level for incentives and specific requirements, the concept of competitiveness has to be redirected to cities more than to nations. Even today, he goes on, city competitiveness is neglected as a main issue in urban economics.

Structural changes in the economy (free marked conditions, capital mobility, international competition, exchange rates, to name but a few) have, in some sense, decreased nation’s capacity to meddling economically and consequently cities have arisen as economic actors at international level. As a matter of fact, Porter’s “diamond of competitive advantage” points towards local authorities as the specific force to shape the economic conditions of the environment in order to provide security for the strategic planning of companies. Even Krugman (1991a) points out that nations are loosing their borders and “sub-national” economies (cities and regions) are emerging to take over decisions once made at national level.

The need for a city competitiveness definition can be taken from Porter’s statement who says “Firms, not nations, compete in international markets”. Coomes (1998) claims that businesses sell to markets (or to cities), not to nations. Therefore, firms located in cities not in countries, use local resources to produce or to provide any service. In the past, companies used to have all their processes within a country, while nowadays it is common for large companies to have operations disseminated in numerous places over the world to reduce costs.



Under these conditions there is a need to study city competition in order to understand the factors associated to it and how to improve them if a city wants to be a protagonist in the national and international economy.

Due to the high number of entities or institutions involved in the local economy, the process to define city competitiveness is not as straightforward as it would seem. It is necessary to provide some definitions in order to draw upon a general framework where all the participants of the city's economy are represented as well as those differentiating cities and nations.

Before defining urban competitiveness it is important to mention and explain the roles of the participants in the process which are basically four: national government, local government, non-elected bodies and businesses.

The national or central government has a direct influence in setting the national policies affecting the performance of the economy. Since it is the only institution able to supply money to the whole country, it determines into some extent the capacity of cities to expend money in incentives and in the provision of services affecting their capacity to design their own strategy.

Local governments are in most of the cases democratically elected and are suppose to represent the local population. Their role in the city's competitiveness is to facilitate the process for companies to do business through keeping an economic stability and fair competition amongst all participants in the economy.

Non-elected bodies are the organisations created to support those economic activities considered as priorities for both local and national governments to sustain and increase the economy of a region or city. Their key role is to design strategies (depending on the development stage of the region or city) aiming at enhancing the economic activity and to reduce the possible constraints for economic growth.

Companies (all businesses) are at the end of the day, the entities more concerned about competitiveness since they will benefit most from it through an increase in profits or market participation. Their role is at the core of the process simply because

they will take advantage of the opportunities generated by the policies of the local and national governments and non-elected bodies. The way they use these “new conditions” will influence the local and national economy and future policies due to the cumulative characteristic of the process in the long term.

The modern approach taken by the public sector is to facilitate rather than to intervene in the economic transactions. This is an important fact because it is assumed that markets know better how to distribute the resources. Nonetheless, such contention is currently under attack because cities, regions and countries have seen an even greater concentration of wealth among a few people.

An important consideration is the distinction between competitiveness and attractiveness. Competitiveness has a long term scope while attractiveness is more related to the short term. Policies aim to increase competitiveness are designed to be long-lasting and therefore their maturity period is longer due to the fact that they embrace many organisations at the same time. In the case of attractiveness, such policies intend to create an immediate effect which can be perceived by the number of jobs created in a period of time.

Yet the promotion of a place, the traditional attractiveness factor, has an immediate consequence, the successful city will get new jobs as soon as the new company starts operations. Contrary to competitiveness, attractiveness policies usually do not envisage other entities when created and pushed forward by local or regional governments. For instance, the promotion of a place or the improvement of business services provided by local governments need not include other organisations.

After these observations, it is possible now to understand more clearly the scope of the competitiveness concept without leaving aside the protagonists of the process as well as a basic difference with a close-related concept which could distort the proper definition of a competitive city.

Hatzichronoglou (1996: p.12) argues that competitiveness is “the ability of companies, industries, regions, nations or supranational areas to generate, while being and remained exposed to international competition, relatively high factor income and

factor employment levels on a sustainable basis”. This definition is still broadly open and do not reflect inherent attributes of cities in the global era such as international rivalry for certain type of investment and people. It can be seen that this definition still lacks of emphasis in putting the city as a central point of analysis and do not reflect the city’s role in providing appropriate conditions for the entities immerse in the local economies.

The competitiveness of a city is more than a function of its economy or business environment. It is the capacity and ability to compete successfully in the market of cities where investors look for “profitable” places to locate their investment (Stewart, 1996).

Begg (1999) uses a neo-classical perspective to define city competitiveness as the efforts carried out by authorities to induce economic growth and to improve the economy along a period of time. He also points out that there is a spatial competition amongst cities for investment and this is reshaping the spatial distribution of resources not just within a country but also at international level. Urban policies are the tools for increasing competitiveness through investment and job generation.

Competitiveness can also be regarded as a set of advantages and disadvantages historically inherent to each place and which can be slightly altered by national or local policies (Porter, 1995). However, Porter claimed competitive conditions cannot be changed entirely in the short or medium term and local authorities do not have too much power to manipulate the competitive level because some conditions are the outcome of highly complex links between cities and nations and they do not have the required political influence to make any transformation.

Exploiting or creating any comparative advantage to generate economic growth in relation to competitors is another terminology provided by D’Arcy and Keogh (1999), where competitors, for the case of a city, are other cities. They emphasised investors, people and government institutions as the responsible bodies for designing the strategies to rise economic performance in a place. The problem relies on the inability of local governments to generate strategies aimed to pursue people to increase their



skills or to provide the proper conditions for companies to invest in any process leading to an overall improvement.

Kresl (1995) has conceptualised city competitiveness as a function of economic plus strategic determinants where the difference between both relies on the type of data used. The former is based on secondary data about the economic situation of a place, whilst the latter deals with primary data in a specific moment of time. The question is whether or not these sources of information can coincide to develop robust models.

Territorial competition is also defined by Cheshire (1999) as a process where groups representing regional and sub-regional economies seek the promotion of economic activity in a location, competing directly or indirectly with other areas, which look for the same.

Lever and Turok (1999) contend that competitiveness is:

“The degree to which cities can produce goods and services which meet the test of wider regional, national and international markets, while simultaneously increasing real incomes, improving the quality of life for citizens and promoting development in a manner which is sustainable” (p.792).

This definition adds the notion of “cities producing” goods and services for markets, and it implies a redefinition of cities as production centres obtaining money and generating a virtuous economic cycle to induce growth and thus augmenting the real income of a population without compromising future resources.

Although some cities are designing good strategies to increase or simply maintain their competitive level, some of them will inevitably lose part of their investment base. Externalities such as other’s cities strategies, financial shocks or the lack of funds and not giving the adequate incentives to people and firms, are amongst others, responsible for poor economic performance. Drawing upon this argument, Krugman (1997) claims that competitiveness at any level is just a measure of economic performance linked to geographical conditions. Because a city is not alone and it is

prone to be influenced by neighbouring cities' actions, competitiveness is just another way to study economic interactions putting more attention on productivity and output variables than in trade linkages.

Krugman posits a debate about the real nature of city competition. At the core of the debate appears to be the question of who competes in the name of "the city": local governments or authorities, their institutions, the companies or the whole set of entities in a place?

#### **4.2 Is there such thing called "city competition"? The debate**

Some scholars such as Krugman and Porter present an antagonistic position about city competitiveness. The core of the debate has been whether or not cities compete and what makes a city competitive to generate economic growth.

##### *Krugman approach to city competition*

Krugman's approach to competitiveness is to neglect the notion of "city competition". What is called "Competitiveness" is just another way to measure the performance of a national or regional economy. Under this notion, cities are chosen by firms in order to generate revenue from an investment or to increase the actual profit level by providing better conditions for production or for services (Krugman, 1995). This profit is a function of trade linkages and patterns amongst all the economic institutions within a region or a country.

Trade in general terms become the central part of Krugman's view about competitiveness. Places providing all the advantages for increasing trade relations will be selected as places to produce and carry out any kind of operations (Krugman, 1993).

Adding to Krugman's perspective, Maskell et al (1998: 50) argued that "Firms interact in markets which, whether designed or self-grown, are undoubtedly social constructions, embedded in territorially specific institutions which define and secure property rights and enable economic transactions".

Local authorities themselves are incapable of increasing or affecting trade patterns because they cannot change the geography of the country to increase or decrease the size of a specific market. Companies select places or cities according to their needs and marketing plans so local authorities are just passive entities facilitating transitions for companies. Local governments are only responsible for enabling economic transactions and to free local markets from external shocks through the implementation of economic policies.

Adding to the above argument, Krugman (1995) contended that agglomeration economies influence the location pattern of firms within a country in the manufacturing industry. For some firms, to be located close to a competitor, rather than a problem, it is an advantage due to possible specialisation levels in labour and suppliers. He denies the concept of “perfect competition” because there are specific characteristics linked to the geography and economy of each region. For example, a cluster of food processing could attract more food processors to a location because they can obtain better prices from suppliers due to scale economies, a common pool of skilled labour, health specialists and a keen local authority willing to cooperate with the industry to provide security for their planning process. The natural consequence is geographical concentration and a place with advantages over others. Thus, the role of local authorities or governments is just to provide stability in the place and to facilitate procedures.

It is clear then, that what makes a city competitive is its set of institutions and their ability to create a good business environment. This approach establishes that cities have a predetermined role in a country and their number and distribution along a geographical space reflect not only externalities, but also productivity. Therefore, increasing returns and not comparative or competitive advantage are responsible for the geographical concentration of economic activity; cities are the outcome of these increasing return phenomena (Krugman, 1995).

It is concluded that companies would locate in places where they can take advantage of increasing returns and not in “competitive places”. Fujita et al (1999) claim that increasing returns are responsible for the creation of new cities or industrial poles where economic activity takes place in an advanced form. Advanced form stands for



economic activities strongly related to all the process from distribution to delivery to the last customer.

To sum up, according to this framework, cities do not compete with each other for investment or for a preponderant position in trade linkages. Institutions and organisations have inherent conditions that shape the place in a certain way, then companies decide whether or not a place provides the characteristics and conditions to receive such investment. Due to this, cities (by their local authorities) do not have any influence to attract companies.

#### *The competitive advantage of cities: Porter*

A radical approach about city competition is presented by Porter (1993, 1995) who argues that countries and cities compete with each other at various levels for public and private resources, productive investment and even for people to maintain their economy and to boost economic growth.

Porter challenges Krugman's argument claiming that competition at city level is not only based on its spatial, environmental or economic linkages, but also public and private administrative capacity and political strategies.

The theory of competitiveness is a counterpart of the traditional agglomeration and increasing returns theories supported by Krugman (1991a, 1991b, 1995). It supports the notion that cities have to compete for capital, central government's projects and high skilled people if they want to increase their assets to generate wealth. Basically, all organisations in charge of economic development (governments and non-elected bodies) are responsible for increasing and gaining more resources for their cities to achieve a higher economic growth.

In the United Kingdom, for instance, cities have to compete for economic resources from central government and this competition has no relation with increasing returns. It is associated to the local authorities' ability to design a good proposal for funds that will be allocated according to the needs of the place.

In the “First Annual James W. Rouse Lecture (1998)” Porter said:

“Prosperity depends on competitiveness, which in turn depends on productivity: the value generated by a day of work and a dollar of capital invested...The only way to enhance competitiveness in the modern global economy is to provide an environment that supports ever-increasing business productivity, combined with a rate of growth that creates sufficient employment opportunities to fully utilise the nation’s citizens” (p.2).

Two points are important from the last paragraph: firstly, the role attached to local authorities to “provide an environment” and secondly, the role of productivity gains. Porter’s approach links together local authorities and public companies as the sources of competitive places. Clusters, the groups of companies located in a region, are responsible for the competitiveness of a place (Porter, 1998).

“Clusters reap competitive advantages due to externalities that go beyond a single firm and foster high productivity within the cluster: critical mass, efficiencies in doing business such as easy access to specialised suppliers, infrastructure and other resources, and a fluid interchange of information and technology” (Porter, 1998; p.2-3). It could be appreciated in this quotation the similarity between the concept of “cluster” and that of “agglomeration” presented by Krugman. It is not a coincidence the strong tie between competitiveness and industry performance. The main difference is the role attributed to local factors beyond the industry activities where government is just another provider of the chain. Porter (1998) argued: “Today, the enduring competitive advantages come from local things: a unique network of suppliers, a unique concentration of specialised skills, leading educational institutions” (p.3).

Although it is true educational leading institutions are just located in one place, this paradigm could be questioned and must be treated carefully. Yet the idea of a local supplier network seems out of date. Nowadays, the so-called “knowledge companies”, mainly those involved in telecommunication technology, are reshaping the way companies do business. Internet has come to reduce distances and to increase the data

rate transference among places and companies. Cities are places where knowledge and expertise converge to provide the most important assets in the modern economy (Knight, 1995).

It is important to distinguish between tacit and codified knowledge in order to understand the new concept of doing business for the “knowledge companies”. Tacit knowledge is derived from new ideas, hidden relationships or new opportunities and it is usually restricted to one individual or a small group of individuals due to its incapacity to be communicated to others (Maskele et al, 1998). After a period of time, knowledge becomes codified because it is now possible to communicate to others by symbols or language, doing it tradable provided there is a market.

The implications for competitiveness rely on how the knowledge generated by companies and individuals is traded. Since knowledge has a price attached when it becomes codified, cities need to provide a framework for companies where the generation and trade of knowledge generate the maximum profits. In consequence, the spillovers of such profits will be transfer to workers in the form of better salaries and wages, raising living standards and increasing the tax collection for governments.

To achieve success in the international business arena, cities must reduce regulation and anti-business attitudes because this will lure more firms and people with entrepreneurial skills to the place (Porter, 1995). Both the public and the private sector have a very important role and a commitment with the society not just in the search for competitive advantage. Indeed, the new trend towards a more egalitarian society within countries points out that business will have a “public burden” or what is more, private business will have to go public in order to increase their competitiveness (Smith, 2000). This shows how competitiveness is also related to the government’s activities and to policies that create the economic panorama in a country, region or city.

Kresl (1995) supports this argument too. He includes in his model the role of government as important factor in developing and measuring competitiveness. However, the model considers governmental effectiveness as a qualitative variable, which depends heavily in the perception of public answering a questionnaire. This



posits the problem of “appreciation” into the analysis because for some people some policies or government actions will be excellent and for others they will be catastrophic according to their industrial sector. For instance, a country imposing a tax on imported fructose could help cane producers to increase their sales but the same policy could damage the soft drinks sector due to its dependency on sugar cane.

Another example at local level deals with the incentives provided by local governments to new companies which are competitors of companies already producing in the place. In most of the cases, these incentives go to big international companies, traditionally large employers, damaging the competitive equilibrium of the local market.

#### *City competitiveness as a networking process*

With the rise of globalisation as the new economic paradigm and with the boost of international trade as the main strategy to develop countries and cities, the forefront approach is to analyse and develop competitive places in terms of networks. For the “new” advocates of this approach (Beaverstock et al, 1999; Rondinelli et al, 1998; Fujita et al, 1999; Stoll, 1999; Storper, 1997) the search for a better competitive level is neither a function of institutional performance nor agglomeration economies. Instead, city competitiveness is a function of the city’s capacity to form networks with all the economic actors located in the place and in others. The more and stronger the links, the more competitive the place might be.

A starting point about the current approach is presented by Beavestock et al (1999) who argued:

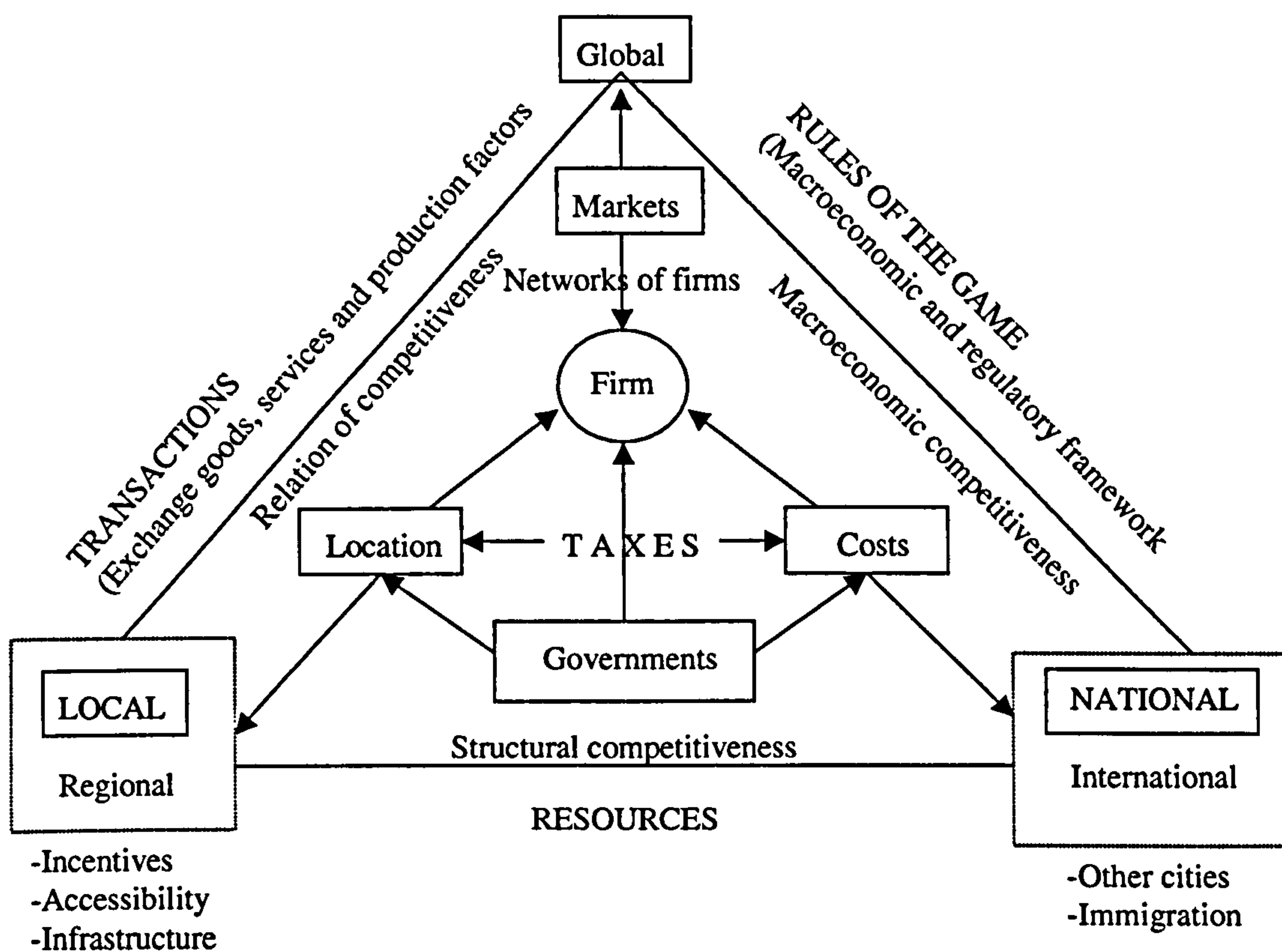
“...a limited number of cities has contributed to an understanding of world city formation but not of world city network formation...no city exists, let alone prospers, in isolation. This is the context in which urban competitiveness should be located, whether from a policy or theoretical perspective. Under conditions of contemporary globalisation, the process of urban competition is a mechanism of world city networking formation” (p.2).

Cities are never autonomous from the nation state. They must follow determined economic patterns aimed to improve the nation as a whole and to reduce disparities. So that, the first network for any city is the link with its central government because it and no other institution will provide the guidelines for the local economy. In this case, the minimum wage is set up by the central government for the whole country, leaving no room to local authorities for manoeuvre in case of unbalances. Cities also are dependant on monetary policies produced by the central banks where the interest and exchange rates are determined. Cities must adapt their strategies to these conditions so as to generate the maximum benefit and the best possible conditions for their population and businesses.

A breakthrough about city networking is provided by Castells (1996) who describes the modern society, not just as a set of economies but also as a networked society operating under many flows of information based upon electronic devices permeating to all levels in a city. This changes the spatial formation of cities because now, according to Castells, a single city could no longer constitute the central point of a network by simple being located in the central geographical place owing to the improvement in communication technologies. Likewise, cities in the periphery have now the opportunity to be points of higher economic activity.

Rondinelli et al (1998) maintain that those cities with more links to global and local business will attract investment and more job opportunities for their population. Indeed, the knowledge-base industry is in charge of providing, at the moment, the most attractive and better-paid jobs in most of the countries around the world.

The problem with the traditional city competitiveness framework is its exaggerated focus on government participation, whilst the modern national economies emphasise “no intervention” in the markets (Marshall, 2000). Thus, the new trend about networking sets up a system to expand local markets to regional, national or international level, which in the long term provides more jobs, economic resources and in general increases competitiveness.

**Figure 4.1: The city and its networking process**

Source: Adapted with data from Kuklinski, 1999.

Storper (1996) demystifies the geographical approach to city competitiveness arguing that places with big clusters of companies are becoming less competitive for new companies because of environmental costs, overcrowding, and no availability of space. Places with good telecommunication infrastructure and good quality of life are now attractive places for investment and they are achieving a global competitive level for the firms they hold. In the new economy, there seems to be no need for motorways and roads, but for cables and Internet access, which is the equivalent of a motorway for information.

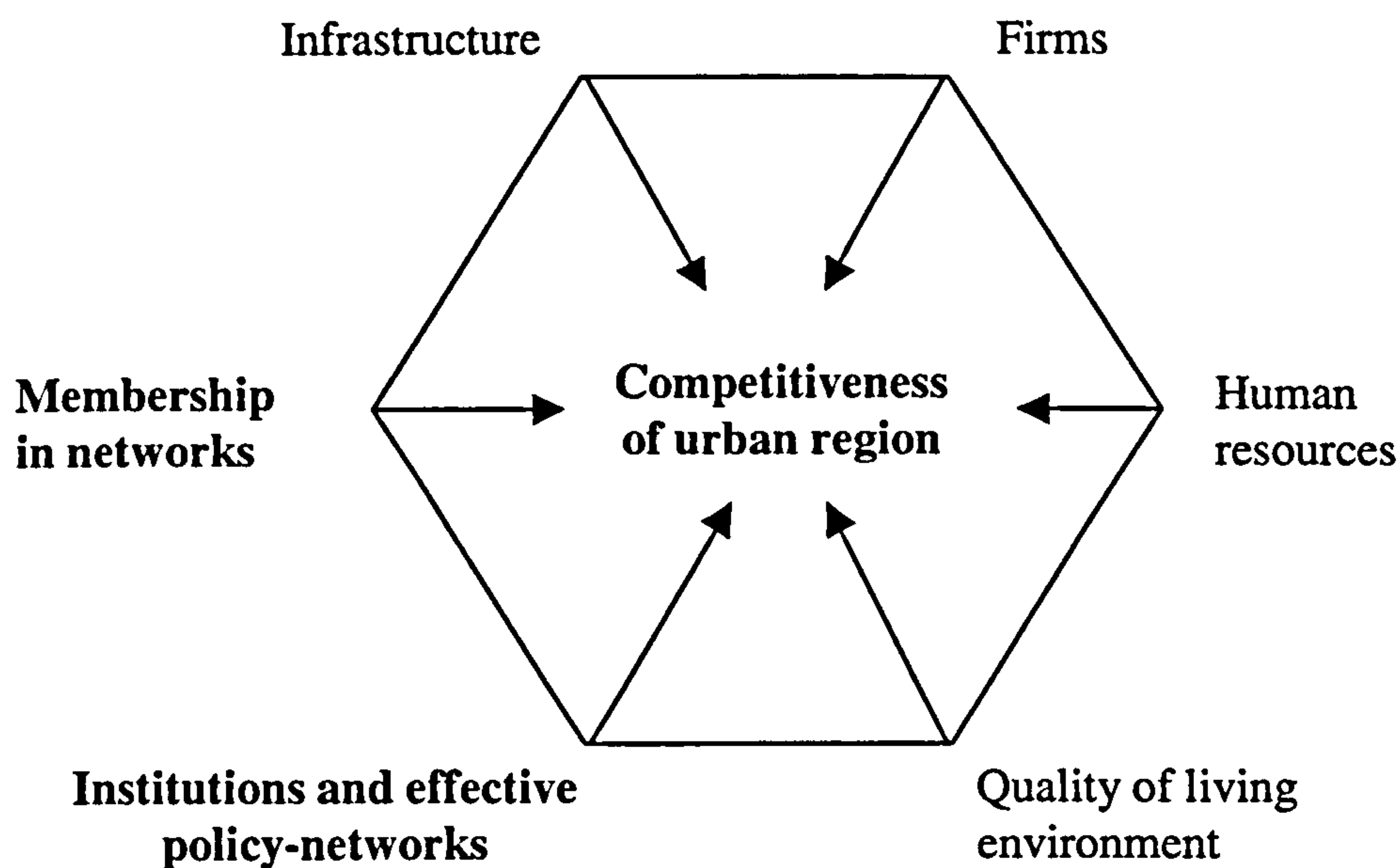
What is more, firms are not just competitive entities, they are also a representation of society, and if they want to succeed, they have to innovate products and linkages with other companies, universities and local and national governments. Thus, competition encompasses not just the traditional elements of productivity and increasing returns, it also deals with forms of interaction where firms and governments are at the core of increasing value and encouraging growth. But amid of this, the procedure of



networking companies and governments to cooperate instead of competing is not so simple because there are mechanisms, at country level, to deter firms in the search for monopolies or cartels.

Trade is an important component in urban competitiveness either at international, national or regional level. At the same time, trade plays an important role as one of the branches in the city's network. Fujita et al (1999) contends that trade could be considered the main link between two or more economies, in most cases in the form of capital transfers. It is trade and not economic transfers from central government what makes a city able to develop its industrial base.

Central place theory seems to fit extraordinary well as a framework to networking and city competitiveness. In the former the geographical space is organised around a central city with specific functions (hierarchy of cities), which the rest of places will not have, like the case of nation capitals. In the latter, trade and international integration or competition create the conditions for an urban competitiveness framework emphasising the importance of the relationships between the different organisations and institutions competing. In conclusion, what makes the city more competitive is the number and strength of its networks both within the country and the rest of the world. Cities, under this approach, do compete as the collection of institutions (government, corporations, non profit organisations, people, etc.) aiming to create better living conditions for their inhabitants and hence, they are unable to live in isolation if they want to succeed.

**Figure 4.2: The elements of competitiveness in urban regions**

Source: Linnamaa, 1999.

Finally, Malecki (2002) claims that there are two types of networks for urban competitiveness: soft and hard. The former refers to the social interactions aiming at gathering knowledge in order to increase the competitive resources of the cities. It does not imply solely knowledge-based but all high-tech companies in any industrial sector because all of them are able to contribute to the local economy, provided they have the technology required to compete successfully in the market. Hard networks are in reality the physical connections required by the soft networks to work. The Internet and any other for of transferring information are included in this definition.

The final aim is to increase the presence of the economic actors in others cities in order to gain more markets and therefore to increase the production of goods and services, which represent the new wave of companies preferred by governments to generate jobs.

This figure also serves to explain the main distinction between the concepts of competitiveness and attractiveness. Attractiveness factors are almost completely under the control of governments, while competitive factors are out of the direct influence of governments.

### 4.3 Competitiveness and local economic development: The missing link

So far, the central point of discussion has been whether or not cities compete and what for. But there is still another issue if the urban economist wants to contribute to the science, the relationship between local economic development and competitiveness.

Few studies have allocated attention to the way in which city competition affects the economic development process of a place (Marshall, 2000). Strategies and not rankings tackle social and economic problems in stagnated economies. Unfortunately, rankings contribute to damage the places' images owing to its inability to explain, at a first glance, the meaning of the attributes used in the assessment process (Coomes, 1998). Another common problem in the study of city competitiveness is how scholars do not explain the facts that made cities to perform in certain ways.

City competitiveness is more than a simple ranking of cities where the "winners" take all the good promotion and the "losers" take the bad and reinforce their negative image with investors. Contemporary proposals in the study of urban competitiveness have to join together how cities compete for investment and how this competitive process induces or affects the development process not just economically but also socially, culturally, etc.

Marshall (2000) claims that there is a concern amongst scholars and practitioners to relate economic development and competitiveness but the focus has been lost owing to national emphasis rather than urban. The reason relies on the kind of policies designed by central governments, which try to organise the economy according to maximising criteria but not according to what the cities need to decrease the unevenness with respect to others. Yet the notion of "development" is understood differently by central and local governments (Henderson, et al, 2001) due to the scope of their activities and their commitments in terms of electoral votes. This fact posits stress in two main issues. Firstly, the national scope does not envisage the competitive needs of urban areas and generates a conflict between the needs of the country and the needs of regional and local authorities in terms of political performance and political agendas to gain or retain power. Secondly, contemporary competitiveness proposals have allocated strong emphasis in the supply side of the economy (production, sales) and have forgotten that demand is also important if an economy is to grow.



Notwithstanding, the main linkages between competitiveness and economic development should be in the following terms:

- a) The competition process forces local authorities to “provide” a flexible business environment to increase its likelihood of attracting investment.
- b) The more competitive a place is, the more chances it has to grow economically.
- c) Very high and very low ranked cities have the opportunity to put more pressure on the central government in order to receive more support or benefits to maintain or to increase their performance.
- d) Since productive capital (not speculative) is the main source of growth, and growth is one of the most important components of development, competitiveness might be considered a relevant factor to attract capital.
- e) Economic development is related to the role played by the city in the system of cities; consequently how it competes or cooperates with others will determine its performance.

#### The competition process and local authorities (a)

Although local authorities are always intending to provide the best business conditions for entrepreneurs and companies already established, this is not really clear. It must be remembered that the economy of a city is a dynamic set of interactions where not only companies live. People also live together with other organisations and institutions.

The pressure of the competitive process has led to governments to provide excessive benefits to business leaving a high burden on people in the form of local taxes. This fact has been analysed by Moomaw and Shatter (1996) who provide evidence about how large cities could tax people less and small towns allocate a heavy tax burden on citizens in order to finance business activities. Their conclusion is that large cities have better opportunities to achieve a better economic development patterns than small towns.

Analysed from a circular and cumulative causation perspective, the last argument is evident. Since large cities charge fewer taxes and provide certain amenities, which other do not, they attract people and also companies. Local governments need not to

tax more because they already have a critical mass paying for most of the service provision, thus the marginal costs of each extra inhabitant and company is reduced. Of course, there is limit into the extent a city can grow without producing negative externalities for the inhabitants and businesses.

#### City competitiveness as a means for growth (b)

Economic growth and development are the two main goals for local authorities. The ranking of cities within countries has increased the pressure on governments to improve their comparative position with respect to other cities. In order to obtain a better position in future rankings, local authorities work to increase their efficiency and effectiveness because rankings are also considered a performance measure in some cases. Competition processes expose the unbalance of economic development through the exhibition of assets that each city has to offer to the public (Maskell et al, 1999). Cities have a set of specific conditions that make it “special” in relation to other places such as natural resources, a market with a particular purchasing power, a labour pool, amongst others. In the competition process, these resources are compared with the resources of other places providing a good reference to establish theoretically who is the best and who is the worst.

Klasik (1999) contends that “competitiveness denotes a permanent capacity which allows a given town or city to face others that provide competition for them on the basis of a variety of competitive systems” (p. 166). Therefore, competitiveness reflects the capacity of a city for economic generation and economic development. Competitiveness is a very important factor to be accounted if local governments want to increase the welfare of their inhabitants. In a few words, increasing the competitiveness of a city is a way to increase its capacity to generate more wealth.

#### Rankings, an attention call for national governments (c)

It is obvious that city competitiveness and rankings are highly related and it is difficult to think about competition without some sort of “classification” (Coomes, 1998). Rankings when are specifically designed to assess a determined characteristic of the economy or industry, are magnificent tools for economists and planners. They provide a reference to adjust strategies and actions plans. The problems emerge when the ranking is to measure broad concepts, like competitiveness, because it is difficult

to compare different cities with different history and even different people with different culture. Quality of life does not mean the same for everybody and as evidence the example of Brazil can be provided. Inhabitants of the large cities (Sao Paulo and Rio de Janeiro) base their lives in work and money, and consider quality of life as having a “nice house full of electronic appliances and the opportunity to buy what they want” (Rosales, 1997). In the same country but in the region of Bahia, quality of life is understood as the free time to do what they want without having to work too much. Rankings do not reflect these discrepancies in perception.

Assuming the ranking is created with a specific purpose, central governments must pay attention to cities at the bottom part to avoid even larger economic gaps between the rich and the poor cities. According to Coomes (1998) any assessment process shows how the national government is tackling problems concerning to the whole population like education, health and industrial policy. The point is, if the gap between the top and the bottom part of the ranking is considerable, then the mix of policies is not the appropriate one and consequently the central government is not performing correctly.

The question is what it should be done with the rankings if national governments want to get better economic conditions for cities. One proposal is to design specific policies and strategies aimed to alleviate the particular negative conditions of each of the “players” in the ranking. For instance, the problems for the best cities could be immigration and incapacity to deal with it due to a shortage of housing and public services in new settlements.

For local authorities, to appear in a ranking represents an opportunity to justify to the central government their strategies and needs for resources. For central governments rankings represent an opportunity to see the effect of national policies in a disaggregate level.

Competitiveness and investment attraction, a combination for endogenous growth (d) Investment (of any kind) is the key for economic growth and also a good way to make a city more competitive. Direct investment provides jobs and generates important spillovers in a community through salary and wages, taxes, etc. Private investment



has always been an important policy aim in urban regeneration to make cities more competitive (Adair et al, 1999).

Yet, Begg (2002) argues that “being competitive” can be equated with “being attractive” to investors. He goes on and said that “the challenge is to make the area more competitive overall, rather than to pursue a particular cluster or specialisation” (p.4). He concluded that developing a comparative advantage in an era of fast technological change is a risk, instead the focus of public policy should be to create and boost the competitive advantage in terms of those attributes that make the city unique and special.

Despite the efforts by some local governments to increase the stock of investment in a city, this does not necessarily means a gain in competitiveness. In some cases the gap between the top and bottom cities is so large that the new investment does not close or reduces the gap at all. For instance, Mexico presents disproportionate economic contrasts as a country due to the unevenness of national policies for development. Northern states have taken more advantage of the North America Free Trade Agreement due to geographical closeness. The average per capita income in the city of Monterrey (in the north of Mexico) is \$92,183 Mexican Pesos (\$9200 USD dollars), while in Tlaxcala (in the centre of the country) is only \$29946 Mexican pesos (\$2900 USD dollars), three times less, being the average salary \$56550 Mexican pesos (\$5650 USD dollars).

Attracting investment represents the first step towards a development process, and since development implies “change”, the new investment will transform not only the landscape but also the industrial organisation and the way things are made in a locality or country (Thirlwall, 1999). This argument draws some implications for competitiveness:

1. Economic growth depends on competitiveness.
2. Attracting investment is an important part of being competitive.
3. If a city is promoted as an “attractive” place, then the whole city is competitive, not just the industry located in it.
4. Boosting competitiveness involves change and transformation.

How these implications are categorised does not matter, what is relevant is how they are taken into account to design plans to foster the entrepreneurial instinct amongst the population. On the other hand, investors need to perceive those changes if local authorities want them to bring their money to their cities. This is the starting point of the competition for capital.

#### Competition or cooperation in a system of cities (e)

Since most of the countries are conformed by more than a city (with some specific exceptions like Singapore and Monaco) the systems of cities arise as a natural condition to study urban economies within a country. Bourne and Simmons (1978) define the concept as a set of cities interrelated amongst them within a region or a nation, where trade and other economic relations determine the function of the system and the level at which each city is related to others.

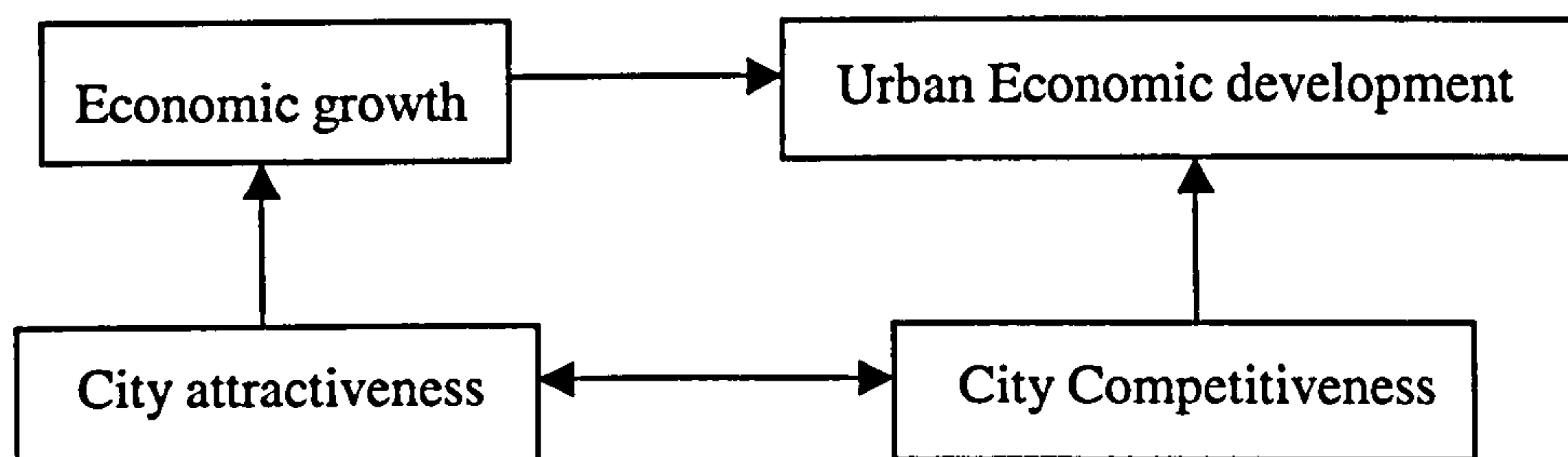
The geography, distribution and number of cities determine the role played by a place within a country and more recently in the world owing to the better telecommunication technologies. But this effect is not only a characteristic of the so-called “global cities”. Even within a country new communication systems have changed the role played by some cities positively, providing more opportunities for both integration into the national competition and cooperation. For development purposes, the redrawing of the system of cities provides also the opportunity for development through a competitive process. The redrawing process is not going to change the economy.

The new urban organisation, where physical distance is becoming less important, has “put cities together” and under these conditions, cooperation rather than competition is the alternative to induce higher economic development levels. For instance, the case of Glasgow and Edinburgh portrays how two very close cities have different positions in the urban system of central Scotland. Edinburgh has been characterised as a financial and cultural centre with great economic activity and constant growth, with inherent activities as capital of the country (Bailey et al, 1999). However this growth has created a high demand for housing, a big strain on transport and public services excessive traffic, pollution, etc.

Thanks to improved communication systems, people can work in Edinburgh and live in Glasgow. Without neglecting the competition between the two cities for projects and companies, the deal includes cooperation between the two councils<sup>1</sup> to improve those details constraining the commuting process and trade, two of the most important economic interactions. Under these circumstances, both cities are performing economically better as well as the region, avoiding the zero sum game of urban economic development.

In conclusion, highly competitive cities will increase the ability of firms to create, acquire, accumulate and utilise their resources faster than competitors located in other places. This will lead to an increase in revenues by local firms, and therefore productivity gains are to be reflected in better salaries and wages, starting the process for an improvement in the development level.

**Figure 4.3: The missing linkage: competitiveness and LED**



The linkages between competitiveness and economic development are by no means sequences of “facts” or “strategies” due to the complex interaction between the variables that can be controlled by governments and those given by the economic actors. Local governments can promote their cities as “distribution centres” as “knowledge-based” but they cannot control the labour’s productivity or the pool of labour required in the place. So that, the principal aims of economic development of strengthening the economic prosperity and providing employment can be achieved and measured if these factors (controllable and non-controllable) are put together to

<sup>1</sup> Probably more if other councils in road between Glasgow and Edinburgh are taken into account. For a more detailed information see “Edinburgh and Glasgow. Contrast in competitiveness and cohesion” at the references.



understand how they interact to generate a specific outcome. This represents an opportunity to study more deeply the development process and the interactions amongst variables associated to either kind of factor. Not all the factors and variables can have the same hierarchy in the development process because all the economic development components (economic prosperity, employment, social inclusion and environmental protection) are mutually reinforcing and need to be complementary. Evidence of this is given by the European Community (1996):

“Local economies are becoming more international but one result of this is that competition is becoming even tougher. Local development is essential since it helps to reduce regional disparities which exists across the Community.”

Thus, competitiveness provides the framework to cope with market forces while local development is an instrument to reduce disparities between regions.

#### **4.4 Competitiveness and attractiveness: Main differences**

It can be argued that competitiveness and attractiveness are the driving forces of LED. However, into what extent competitiveness and attractiveness are alike or differ between each other? So far, both concepts have been reviewed as independent factors associated to the improvement of economic conditions in cities. While attractiveness (or the efforts made by local governments to attract investment) is one of the initial forces to induce growth in conjunction with local policies, competitiveness “is partly about the productivity of a city in relation to other cities and towns” (Bailey et al, 1999; p.9). In a few words, competitiveness demonstrates how cities use their available resources to provide stability for firms.

The main difference between competitiveness and attractiveness deals with the level of government participation in the economy. What governments do directly to increase the investment level in a region is considered a function of city attractiveness or as Begg (2002) calls it, “investability”. For instance, “city promotion” (money spent in promoting the city) is an inherent activity of local governments to pull in investment and it is assumed to be a variable representing attractiveness.

On the other hand, competitiveness forces are more independent from government intervention. In this case, macroeconomic factors and financial shocks determine the value of certain indicators where governments have almost no capacity to intervene. The inflation rate in a city is partly an outcome of the local market forces. National governments can implement certain actions to reduce it, but this does not impact immediately in the economy, takes time and the final outcome is unpredictable in terms of accuracy. Local governments can do nothing to manipulate not also the inflation rate, but a countless number of economic variables at local level such as unemployment rates, per capita output, union conflicts, to name but a few.

Cities have a certain economic level, whatever it is, and governments look for better economic, social and environmental conditions for their citizens. The economic development process is in charge of providing a model to appraise the integral wealth level at which the city is in a specific point in time.

Making the city attractive is the first step towards a development process, while making the city competitive is the second step where the city is able to sustain a higher economic performance. In the first part, attractive cities are looking for investment without restrictions; the important issue is to tackle poverty by reducing the unemployment rate. At the second stage, once the population is working and poverty is decreasing, the city becomes competitive. Then not all the investments are welcome due to environmental costs, overcrowding, lack of physical space, shortage of housing, or in general due to marginal decreasing returns. Cities' authorities at this stage of competitiveness, try to pull in those companies capable of paying higher salaries and wages to increase standards of life and thus to lure more skilled labour, producing a positive economic spiral where everyone wins, at least in the overall picture.

This “spiral” is a cumulative causation process and can be explain in terms of cities in developing countries as follows:

1. Any city has a given level of economic activity. Notwithstanding, there is a need, by local governments, to “deliver” more wealth to their citizens to maintain the power in future elections and to reduce poverty levels.

2. To induce the desired growth, more investment is required. The city is “sold” as a perfect location and all kinds of companies are received to increase the number of jobs.
3. Less unemployment implies less poverty and more happy voters. The growth level is augmenting and the city has a look of “progress”.
4. Once the city has reached a level where all those looking for a job can obtain it, the city becomes highly competitive. Local authorities at this stage design strategies to attract only certain type of firms. Completing industrial clusters, developing industrial, welcoming clean industries, etc., becomes a traditional vocabulary amongst those involved in economic activities in the locality.
5. The city has reached its physical limit in terms of spatial distribution, no more space for industries is available, housing is expensive and immigration to the area is frequent. Public services are overused and in general the population claims for improvements. Some companies abandon the city to locate in less expensive places.
6. The answer to the problem is to bring more investment, both public and private. The former will be used to expand the provision of services to the new inhabitants, to urbanise more space outside the central core of the city, as well as to increase the housing stock. The latter is to be used to absorb the newcomers and to create more employment in those sectors with higher propensity to pay better salaries. After this, the cumulative process reinitiates.

This circular cumulative process evidences two things: 1) Local governments need investment if there are to promote growth (attractiveness); and 2) cities need to keep their economy at certain level if development is the goal (competitiveness). Analysed deeply, attractiveness is a function that may be associated with growth while competitiveness to development.

Cities facing economic decline are more concerned about attracting investment rather than being competitive at local or international markets (Henderson et al, 2001). Since no jobs are available, local governments do not put any restriction whatsoever to the companies willing to locate in the city. City competitiveness has turned to be something just in the hands of some cities because it is so specialised and complex



that only some cities over the world the can afford to pay the price of being a global competitor (Sassen, 1991).

London competes with Frankfurt or New York but not with Bilbao or Manchester owing to the kind of investment managed in the financial capitals, the other two cities hinge heavily on manufacturing activities. At national level, it has been claimed that the location and position of the city in the system of cities determines its competitive role in terms of attracting investment. The way cities are perceived by investors conditions the kind of firms prone to be located in their territory, putting pressure on them in two ways: 1) the need for changing the perceived image to expand the potential market, 2) the design of strategies to convince companies already undertaking operations in the place that the new image is not to add any kind of unfair competition.

**Table 4.1: Main differences between the concepts of competitiveness and attractiveness**

<b>Competitiveness</b>	<b>Attractiveness</b>
The city and its resources and assets. Measures of economic performance. The city as a transforming entity. Development as goal.	The city and its potential market. Perception measures amongst investors The city is a product. Growth as goal.

#### **4.5 Econometric and ranking models of city competitiveness: a comparison**

Few efforts to make rankings of cities are carried out on frequent basis (as much as data availability allows) and are available in the USA (Fortune, Places related almanac) and Europe (Eurocities conferences, Best places for business in Europe).

There are different models to assess the competitiveness of cities, which include a large range of variables and combination of data, some of them developed by European scholars and the some others by American. This consideration is important due to variations in spatial perceptions and consumption patterns in each culture.

Cheshire et al (1986) provided a regression model to measure urban performance in mayor European cities. They found cities with population declining are also cities

with running-down economies. The robustness of the regression is notable due to consistency patterns in the performance of bad urban areas along the evaluations carried out. A main contribution of this model was its capacity to use rankings to explain growth, not just at city level but also at country level. However, they recognise that the model's main limitation is basically its inability to explain the reasons for urban problems. It must be clarified that although they do not use the word "competitiveness", this is one of the first attempts to measure urban performance, just as it is conceptualised so far.

In an extension and update of the 1986 research which included Spain and Portugal in the European Union and the availability of new data, Cheshire (1990) applied again the 1986 model adding a couple of variables about unemployment and travel preferences. The results were consistent with expectations, Spanish cities were not performing at the average of other European places and the last three places of Cheshire's ranking were occupied by Seville, Cordoba and Malaga, all of the in Spain. Changes in the position of some cities were not common but appeared.

It is not until 1995 when the concept of "territorial competition" appears in papers produced by Cheshire (Cheshire et al, 1999; Cheshire and Carbonaro, 1995a). With the integration and converging process of Europe being more evident, the new trend was to assess functional urban regions (FUR's) in order to create urban policies dedicated to reduce inequalities amongst cities (Cheshire and Carbonaro, 1995b, 1996; Cheshire and Gordon, 1996, 1998; Cheshire, 1999). All these models were concerned with how to measure urban performance to create urban policies aimed to solve the problems of economic divergence amongst the big cities.

Lever (1999) provides a comparison of some competitiveness models to explain discrepancies in GDP per head in some of the European capitals as well as how to measure urban performance by evaluating the role played by capitals as concentration nodes, analysing geographical functions to explain growth rates. With data from Eurostat, he also provided evidence about the most delinked cities from their national economy where Birmingham, Paris and Berlin are the most remarkable examples of this new trend.

Lever's contribution is that capitals are usually the most competitive places in their countries. He also gives evidence of the traditional differences between the northern and southern areas of European countries. Yet he reinforces the well-known notion that the "blue banana" is the most competitive region of Europe. Nonetheless, the economic tradition of the cities is not included as an important factor to explain asymmetries. Comparing a tourism capital as Paris with a financial one as Frankfurt or London might produce distortions when a ranking is created.

Another important theoretical model has been developed by Kresl (1995). He claims that competitiveness is a function of economic determinants plus strategic determinants. The main difference between both is the type of data used for modelling. In the first case, secondary data are the base while in the second the data come from surveys and questionnaires. Particularly, economic determinants are composed by a) factors of production, b) infrastructure, c) location, d) economic structure, and e) urban amenities. On the other hand, Strategic determinants are a) governmental effectiveness, b) urban strategy, c) public-private sector cooperation, and d) institutional flexibility (Kresl, 1995; p.51).

However, the main disadvantage of the model is the mix of primary and secondary data in the same model, mainly due to a lack of response by the targeted people. This has been put in evidence when Kresl and Singh (1995) tested the model for 40 American cities. His ranking is composed by an equation derived of a regression model where instead of explaining the values of the regression, he just used the coefficients to explain what he describes as "the urban competitiveness index". Owing to the lack of primary data, Kresl included only the economic determinant to create the ranking. Although the values obtained from the equation seem to represent "the declining" as well as the "buoyant" economies, the real concept of competitiveness is not encompassed. A very important factor such as the performance of the government was not evaluated, reducing the representation of the whole model.

Coomes (1998) proposes a "system of comparative performance indicators" to assess and compare metropolitan areas of America. His work intends to be a counterpart to traditional "ranking games" (p.1). Data components are weighted in order to measure the different dimensions of the urban economy, assuming that not all the cities



compete directly. He goes on arguing that just some cities with the same industrial and political characteristics can be compared if the ranking is to be realistic. Coomes takes a sample of 286 Metropolitan Areas of the USA applying a set of nine factors to raise his Economic Performance Index for Cities (EPIC). These “economic dimensions” are 1) geography, 2) demography, 3) economic structure, 4) economic performance, 5) costs of business, 6) costs of living, 7) human capital, 8) physical capital, 9) quality of life.

The main contribution of Coomes’ model is its ability to show specific problems of urban economies while at the same time, provides an overall comparison amongst those “similar” economies. For instance, the model helped to explain why Louisville, KE, the USA performed badly in the economic dimension: it was the only place, of the whole sample, which had added manufacturing jobs to its industrial base but just those of low payment.

A general overview in a traditional ranking would only evaluate the variables “jobs”, which in this case was “excellent” but a more careful analysis showed the “quality” of the jobs generated was not enough to support growth. Checking the model more carefully, there are neither criteria to select the cities to be compared nor a recommended size for the sample. At the same time, the model combines data with different seasonality and it averages to select the yearly result. Also there is the problem of combining estimated and given data for the model, which can be taken as a serious weakness.

The report “Edinburgh and Glasgow. Contrasts in competitiveness and cohesion” is another example examining rather than modelling, the concept of competitiveness for two cities in direct competition. There are 3 main factors to study competitiveness and cohesion: economy, society and environment, and governance, though the report does not explain the dissimilarity between the concepts of competitiveness and cohesion. Despite this drawback, the interesting point is that there is not a ranking whatsoever; moreover, the “contrasts” put in evidence these cities in terms of specific variables carefully selected to portray the disparities between this two Scottish cities: Glasgow and Edinburgh.

The assessment process of cities is not just restricted to the main protagonists of the world economic activity, like Europe and America. Elsewhere there have been attempts to develop competitiveness or economic performance models, using rankings of all sorts. Zhao and Zhang (1996) made an analysis of the urban performance in China with the particularity of including urban size control as the framework for appraisal. Their contribution is to measure China's economic growth by using urbanisation as a core variable. In total, 50 variables are used in a sample of 467 Chinese cities. Three factors are the core of the grouping process: 1) economic efficiency; 2) social efficiency; and 3) environmental efficiency.

Their result is similar to that found by Moomaw and Shatter (1996). Large cities tend to be more "efficient" and competitive to attract foreign investment. They argue that even when "mega-cities" are more efficient, small ones are cheaper and safer. Another important argument is that those cities with high performance tend to be attractive places with also higher levels of economic development, though this last statement lacks evidence in the paper.

Another example of the efforts to evaluate competitiveness outside Europe and USA is provided by the Centre for Strategic Studies (Centro de Estudios Estrategicos, CEE) in Mexico. The centre publishes every three years a set of indicators of competitiveness for the 31 Mexican states<sup>2</sup> and the Federal District (Mexico City) using data from the 1990, 1995 population and industrial census.. The model is a replica of the IMD model, the variables are grouped into 9 factors representing the internationalisation of the economy, human resources, infrastructure, to name but a few, which capture somehow the reality of the state. This ranking combines primary and secondary data from different sources. The survey is carried out nationally and has a very good response rate by entrepreneurs, government directors and executives, the core of the sample. The ranking provides a good insight about the situation of the states in general.

In spite of the large number of primary and secondary variables (206 in total) the ranking posits some problems. Firstly, the model has not been consistent along the

three versions already produced, varying from the number of variables included up to the methodology to design the ranking. Another problem is the reduction of primary variables included due to the length of the questionnaire and the response rate. The first version used to have more than a hundred variables to be answered by the person polled, reducing the effectiveness of the tool. In order to avoid this problem, the last one had only 64 questions, which boosted the number of responses but reduced the amount of information for analysis.

At city level, Serrano (2000) tested a regression model for 32 largest Mexican cities using a set of 42 variables to evaluate competitiveness. The variables were gathered according to the literature and the result was the expected: a high  $R^2$  value, demonstrating that competitiveness has almost a well-structured definition.

One important limitation in this study is the lack of data about the distribution of the standard errors in the model to reveal whether the high  $R^2$  value could be associated to the number of variables included in the model and not necessarily to the explained variance.

Poland is not the exception in the production of competitive rankings and models. The conference on “Competitiveness and regions in the Polish European perspective” provides a good reference on the understanding of the forces affecting the competition of the Polish regions as well as the most important cities.

A competitive index has been created by Wysocka (1999) to assess the opportunities and threats the Poland’s regions. The ranking of the cities is made according to a set of three factors: 1) basic indicators (demographics and spatial variables) 2) Privatisation and economic conditions of the largest enterprises; 3) the potential of the capitals in the new “voivodeships” (spatial organisation).

Once again, the capital region (Warsaw) is the most competitive place of Poland, an expected outcome according to the findings of Lever (1999). Yet, the ranking reflects another expected result, the more populated the region, the higher its competitive

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<sup>2</sup> By state is understood a set of counties which have a democratically elected governor to represent



level. A remarkable point of Wysocka's research is the derivation of a parallel qualitative ranking, which represents the opportunities and threats for each region. Besides, he places the information into the context of economic development, arguing that low competitive regions have the less socially and economically developed cities, supporting clearly the relevance of competitiveness as a driven force for economic development.

Finally, the present literature survey is by no means exhaustive and recognises that further models exist elsewhere, but due to the extremely high similitude amongst those presented in this section, and due to the aim, depth and scope of the research, the analysis is restricted to those considered the most representative.

**Table 4.2: Comparison of the competitiveness models**

Author/s	Type of model	Number of factors/variables	Sample size	Main limitations	Name of the factors
Cheshire 1990	Linear regression	1/9 5 Country dummies	117	-Not all the countries measure the variables in the same way.	-----
Cheshire and Carbonaro 1996	Linear regression	6/14	118	-Uneven distribution of variables among factors to elaborate conclusions.	-Objective 1 vars. -Objective 2 vars. -European integration -Spatial processes -Dynamic knowledge-spillovers effects -Natural factors.
Kresl and Singh 1995	Linear regression	2/13	40 American cities	-Lack of secondary data originally encompassed in the model	-Economic determinants -Strategic determinants
Kresl 1999	Linear regression	2/17	24 American cities	-No availability of data on public-private cooperation.	-Economic determinants -Strategic determinants
Coomes 1998	Simple ranking	9/131	285 Metropolitan areas	-All the factors have the same relevance as well as the variables.	-Geography -Demography -Economic structure -Economic performance -Costs of business, -Costs of living,

their interests in the national parliament.

					-Human capital -Physical capital -Quality of life.
Serrano 2000	Linear regression	6/42	32 cities	-No evidence of the robustness of the model.	-Human resources -Physical Infrastructure -Technological support -Business climate and suppliers -Government -Economic conditions
Zhao and Zhang 1996	Weighted ranking	3/50	467 cities	-Few factors in comparison with other studies.	-Economic efficiency -Social efficiency -Environmental efficiency
CEE 1995, 1998	Weighted ranking	9/206	16 states	-Random weighted process with no specified criteria.	-Economy -Infrastructure -Human resources -Financial resources -Science and technology -Management -Administration of public resources -Institutional framework -Internationalisation
Wysocka 1999	Simple ranking	3/30	16 city-regions	-All the factors and variables have the same importance in the model. -Traditional competitiveness factors (like Government) are not included	-Basic indicators (demographics and spatial variables) -Privatisation and economic conditions of the largest enterprises; -The potential of the capitals in the new voivodeships (spatial organisation).

One obvious conclusion that seems to emerge after the comparison of the literature is the evident similitude between the factors included in the models to measure competitiveness. The names of the factors do not change too much, but above all the variables representing the factors coincide notably. Therefore, the notion of not having a clear definition of what is meant by “competitiveness” might be fallacious. This is contrary to the point of view of Bailey et al (1999) and Kresl (1999).

## 4.6 Measuring the cities' competitiveness

### 4.6.1 *Human resources*

Cities have people with specific skills, and also unskilled labour. Skills and competencies are a very important asset in supporting economic growth. Human resources constitute the heart of the city because workers become both inhabitants, and the demand force in the economy at the same time (OCDE, 1997). This factor is the only one to play at least two roles in the economic system. The first one deals with the role of “output”; workers have the ability to produce goods and services with a mix of economic assets. The second role played by human resources is as consumers, because they also need a “basket” of goods and services to live every day. How the basket is compounded deals with another factor: quality of life.

Pompilli (1992) concludes in his study that the existence of labour with certain skills is a powerful attraction to certain activities. He notes that the differentials among the cities seem to shrink over time, suggesting a “professional” urban life cycle, but this could be due to the effort of the cities to amplify their economic structure or due to the spreading of individual firms beyond their original operations base.

### 4.6.2 *Local economic conditions*

The power of an urban economy is represented by factors such as the urban inflation rate, growth of the regional economy in a time period, percentage of the total national employment, foreign direct investment, among others (Temple, 1994).

Kresl and Singh (1999) in their research, used a single equation to represent urban competitiveness, arguing that this concept could be represented in terms of manufacturing value added (change) retail sales (change) and business receipts (change). Once again, emphasis is again allocated in pure economic performance of the local economy, leading the conclusion that this is merely a competitiveness factor.

### 4.6.3 *Technological support*

Malecki (1997) argues that “competence to discover, select, adopt, utilize, learn and improve new technology is a key determinant of the economic success of firms, of their employees and consequently of the regions in which they are located” [p.25]. In a few words, technology for Malecki is the outcome of Knowledge.



Local governments have two ways to attract capital. Firstly, an adequate and growing hi-tech infrastructure is needed by venture capital. Secondly, getting back to the business of building integrated strategies to bolster the underlying economic and technological capacities of states, regions, and metropolitan areas (Smyth, 1994).

High productivity and increasing productivity are the key to making an urban economy more competitive. Newer technology generates output growth and an increase in labour efficiency. The primary cause of the relative decline of manufacturing in large cities was a lower rate of capital accumulation (Kresl, 1995).

#### *4.6.4 Physical infrastructure*

Cities and regions want to be identified as distribution centres, manufacturing areas, and financial centres. In order to attain the “desired” category, such cities and regions have to invest money in creating facilities and knowledge to support their image. Financial centres require good telecommunication systems as well as employees with financial skills. Therefore, universities and telecommunication companies have an important role to play for the city: if they are not able to provide these requirements, companies will not locate there (Burnley, 1980).

Theory says that infrastructure can be enhanced by local authorities through investment in roads and motorways, water treatment plants and in general in all those services and assets provided by local or state authorities. This government intervention is an attractiveness characteristic according to some definitions of the concept. On the other hand it is by “excellence” (due to its relevance) a factor of city competitiveness cited in various studies where it has been demonstrated that infrastructure variables play an important role at theoretical and empirical level to determine whether or not a city could be competitive. The models proposed by Kresl (1995), Lever (1999), Kresl and Singh (1999), provide an argument where some part of the local infrastructure is far beyond the control of governments. Infrastructure such as warehouses built by private companies, private industrial parks, the urbanization of industrial areas, and the management of toxic waste by local firms for those companies located in the area, represents a clear example of the kind of infrastructure not controllable by governments.

The property market also plays an important role in urban competitiveness by affecting the price of land, office space, and housing (Bramley and Morgan, 2002). This kind of infrastructure is important for both businesses and people. In the first case, there is a need for office space and for industrial areas that must have all facilities for production and for providing services according to standards.

Local and regional governments are responsible for land planning and for the provision of some services. However there is a trend where more and more industrial parks are managed by private corporations which are in charge of building the entire infrastructure according to the local planning. There are now private companies managing the city's sewerage and supply of potable water.

In the second case, housing is considered as a vital asset for people and it is usually the most important form of saving. Local governments influence the housing supply by offering social housing at reduced prices as a way to maintain prices under control. Another way to influence the market is by giving financial assistance and tax incentives for buyers and builders when the market is very tight (Bramley and Morgan, 2002).

The relevance of housing and business property relies on its capacity to deter possible investments in a city. The lack of industrial and office space push the prices up for these assets, deterring investor to come to the place because due to high installation, expansion or relocation costs in comparison with other places. In the case of housing, it represents a bigger problem not just for companies for also for workers. Tight housing markets usually have a higher price attached which puts forward the demand of workers for higher salaries, increasing living costs and usually the inflation rate of the region.

Governments and non-elected bodies have to work together to reduce the negative impacts of tight land property markets. This can be done in two ways: either expanding the supply in the city by building houses and using brown and green fields to provide industrial space or by giving incentives to people and companies to locate in other places less crowded, provided these incentives cover the marginal costs of not being located close to suppliers and customers.

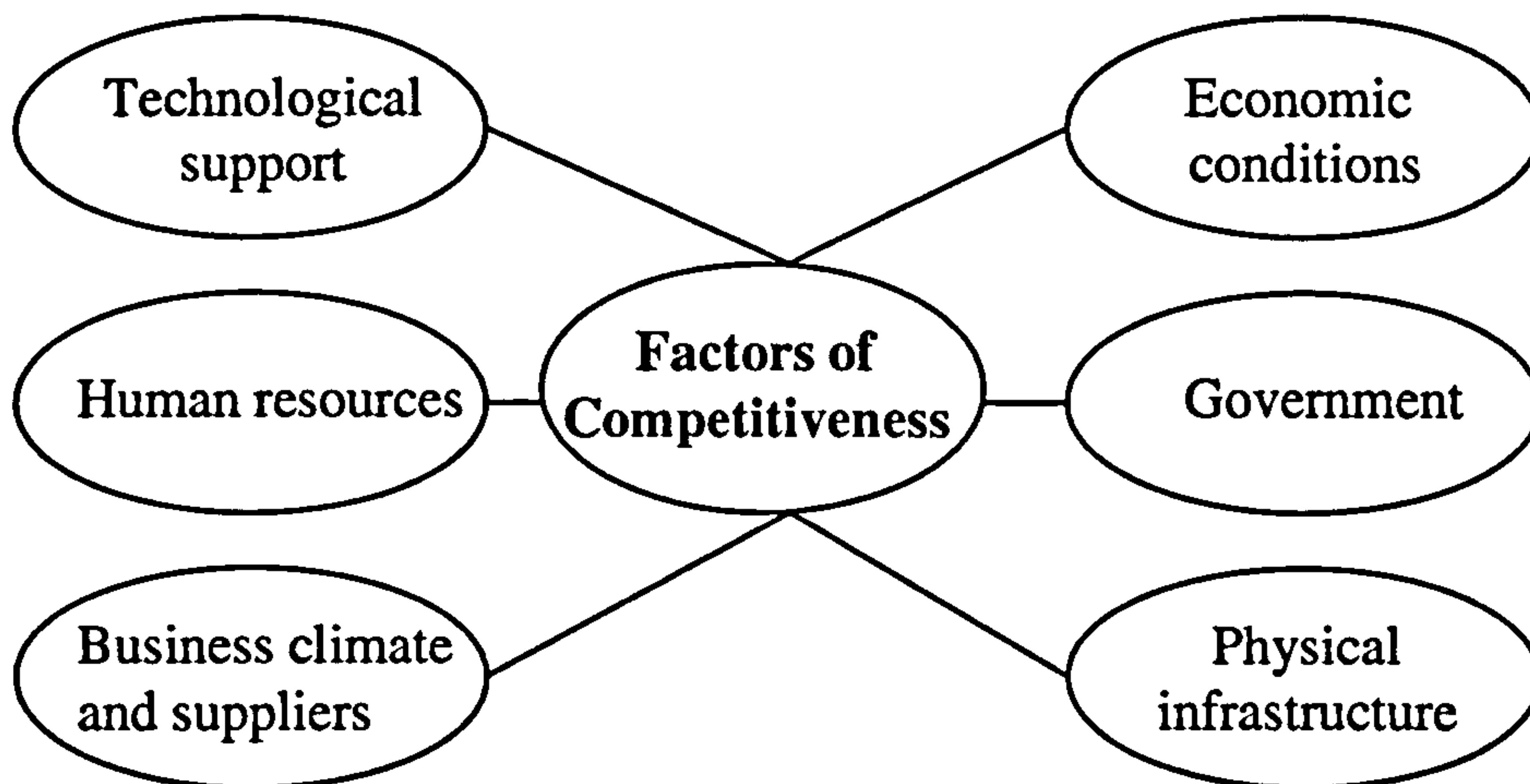
#### 4.6.5 *Business climate and suppliers*

Business climate can be viewed as the perceived atmosphere where companies find competitive conditions to attain organizational goals (Hayter, 1997). This factor considers suppliers as the main core concept due to their power in determining important factory variables, such as production, raw material stocks, and inventories of final products, and even vertical integration strategies.

Ashworth and Voog (1995) suggest that cities in their effort to attract some companies must be able to determine if they can provide at least, good “qualifications” such as a central location, transport infrastructure, cheap land, some subsidies, resident amenities and a flexible and large labour market to avoid high salaries and wages. They analysed seven German towns, (previously studied by Bouwers and Pellenberg in 1989 and cited in Ashworth and Voog, 1995) to prove their hypothesis that some places can improve their attraction of companies just manipulating a small set of variables or simply promoting themselves as places with special advantages over others. The important point here is that they claim cities can gain more attractiveness if they promote some characteristics wanted by companies to obtain a remarkable competitive level in the market.

Even despite “just in time” systems, suppliers are also responsible for creating a competitive city due to their ability to improve the supply chain of almost every company whatever its industry is. Suppliers provide manufacturers with commodities or goods for output. These commodities and goods are most of the time raw material. However, new forms of “suppliers” should be considered under this definition, like in the case of consultant companies, lawyers, and even university research centres (Porter, 1990) because they contribute notably to the performance of other organizations. Figure 4.4 summarises the factors of competitiveness.



**Figure 4.4: Factors representing competitiveness**

Note:

The role of “government” was described in chapter 3 due to its consideration as an attractiveness factor too.

#### 4.7 Conclusion

This chapter has revised the main definitions and models about urban competitiveness characterising it as one of the two driving forces in LED. The bases for such a link were presented, giving evidence that most of the contemporary scholars have neglected the importance of linking competitiveness to development.

For the purpose of this research it is necessary to provide a more comprehensive definition of what is meant by city or urban competitiveness contributing in this way to clarify and to reduce its broadness according to some authors. Hence, urban competitiveness is:

“The level to which cities set up stable economic and social conditions to allow companies and entrepreneurs to meet the expectations of regional and national markets with advantages over the competitors located in other places, while providing job opportunities and better incomes for the population, fostering growth as a way towards sustainable development without compromising the welfare of other cities.”

City competitiveness is more than a simply “performance measure” as Bailey et al (1999) argued. It is a system of interactions aimed to induce growth and development for populations through either the encouragement of agglomeration economies,

networks or direct competence for capital at both national and international level. What determines the competitiveness of cities is not relevant when urban policies are created, the real fact is how cities can perform better economically to keep the firms and population and thus reinforce a positive spiral of benefits for everybody.

The significance of such varied frameworks for competitiveness is that local governments must be capable of attracting industries to complete clusters, in case there is any, must be effective and efficient to provide an adequate business environment for the firms' needs and they must be able to network the city with the rest of the country and the world to capitalise market opportunities.

Whatever the approach taken, local governments have an important role in the development of city competitiveness. Urban policies aimed to bring about development will not work unless other actors of the economic system are committed themselves to support those policies. At the end, what really matters is how the competitiveness of a city is transformed into development for all the communities.

# Chapter 5

## Philosophical and Methodological considerations

### Introduction

In this chapter I describe the main issues concerning the philosophical and methodological issues in economics in order to present a structure able to justify why more research in urban economic development is required.

Since no research is complete without a scientific framework, the current chapter begins with a review of the main philosophers (Popper, Lakatos and Kuhn) of science and their contributions to scientific methodologies applied to economics particularly. The second part analyses and assess the main studies in urban economic development to evidence the gap that this thesis will cover by examining the Mexican economic system in the last 10 years. Section three describes the unit of analysis as well as the most important concepts for the empirical section in chapter seven. Section four cites the particular cases where different academics and scholars suggest the need for more research in the field of urban economic development with a special emphasis in the role played by competition and capital attraction. Finally, the last section provides both the expected contributions and results of the current research.

### 5.1. The evolution of economic models: from Popper to Kuhn

The term “methodology” provides criteria for the acceptance and rejection of scientific research and sets standards which discriminate between valuable and invaluable knowledge. The risk, however, is that there is not a “perfect methodology” and today the discussion about what should be regarded as a “good” methodology is still under scrutiny (Backhouse, 1994).

It was not until the 1980s when economists became more concerned about how to do economics and its implications (Blaug, 1994). This fact emerged by the large diversity of economic theories and models available in the literature. Even so, many of them



are still unable to explain and predict the downturns in the economic cycles of small and large economies.

This diversity of economic models can be attributed to the paradigms proposed by Popper, Lakatos, Kuhn or to a combination of the advantages of each. A combination of different approaches has proved to be the best way to tackle economic problems since many factors are involved, ranging from social to political issues. The risks of any approach are clear. For those scholars who accept Popperism as the “only” way to do economics such wide approach could seem incorrect and lacking in veracity. For those of the Lakatian or Kuhnian tradition it would seem impossible to create a “perfect” methodology since it is always possible to demonstrate that there are other ways to explain the truth. In any case, the important point about methodology in economics and urban policy is the knowledge contribution to the development of theories and models to explain social phenomenon.

Traditionally, the advance of economics has been linked to other social sciences like sociology, geography, politics, to name but a few. The interaction amongst these disciplines adds complexity to the analysis because it is not possible to separate the economic activity from the social or political context. The classic economic assumption of *ceteris paribus* has been very sharply criticised by post-modern economists who argue that it is impossible to sustain such condition because economies are dynamic entities with permanent movement.

But why would a combination of approaches be the best option for someone providing a contribution of the field of urban policy and economics? To give an adequate answer it necessary to revise the proposed methodologies by those who established the precedent: Popper, Lakatos and Kuhn. It must be clear that this revision is by no means exhaustive since it is only a reference for further discussion and a basis for a new proposal.

#### a) Popper

For Popper (cited in Pheby, 1988), theory has to be falsifiable if it is to be considered as “scientific”. By falsification is meant the overturning of previous knowledge to achieve better approximations to the truth. This is only possible if the scientist is able

to discover something more capable of explaining the problem because there is always an opportunity for finding better solutions. It has to be pointed out that this rationality emerged as a counterpart of Hume's inductivism.

Popper's methodology starts with the definition of the problem. A clear definition provides an excellent framework for analysing the situation. In this way, theory can be created and exposed to falsification. The next step is to put forward the hypothesis, which is to be tested as many times as possible in order to reduce the error. Finally, he recommends eliminating the errors by "discarding dubious hypothesis" (Pheby, 1988; p.26). This is a cumulative process which should continue permanently because there is not "an ultimate truth" (p.26). A critical point in Popper's methodology is the idea of a reality in the world that needs to be discovered if science is the ultimate aim.

Pheby (1988: pp 28-29) provides ten basic methodological rules proposed by Popper.

1. The scientific nature of a theory is determined by its susceptibility to falsification.
2. If a refutation threatens a theory we should not rescue it by rendering it more resistant to falsification.
3. A new theory, in order to be acceptable, must always possess greater empirical content than its predecessors.
4. An acceptable new theory should be able to explain all the past successes of its predecessors.
5. Theories should always be tested as severely as possible.
6. Any theory which has been experimentally refuted should be rejected.
7. Any such refuted theory should not be revived at a later stage.
8. An inconsistent theory is unacceptable.
9. We should minimise the number of axioms that we employ.
10. Any new theory should be independently testable.

### A critique of Popper's methodology

The main critic for Popper in economics has been the fact that in economics different theories are interrelated on different aspects of any given economy. Thus, the concept of verisimilitude is useless due to the lack of a priori empirical evidence. This in fact contradicts rule number three.

The excessive emphasis of Popper in empiricism leads us to question his proposal because in some cases theories are developed as simply theoretical frameworks and there is no need for empirical demonstration. For example, the statement of Friedman about the money supply growth as the only cause of inflation would not support the analysis of Popper and nevertheless, it is a universal rule in economics perfectly accepted in the academic community.

Another problem is rule ten. Some economic experiments are not testable due to social problems. Then, the only way economists can undertake experiments is by creating models with perfectly defined parameters and limits. Nonetheless, the extent to which these models can “represent” overlapping social events (economics is more than just money issues, it is culture, social interactions, geography, etc.) has been widely discussed. Although such discussion could lead the dismissal of economics as a science, nowadays nobody denies the importance of economics and policy as the main driving forces for all the economies in the world.

Popper placed emphasis in “falsify” theories in order to test them, but in doing this there is a risk of rejecting the theory by mistake. However, there is no guideline for the number of attempts to falsify theories. Hence, the scientist can spend his life falsifying a theory but without making any contribution, though this was recognised by Popper who at that time could not provide an answer to the problem.

Hausman (1992) suggests that the best way to avoid this never-ending falsifying process is simply to test the new theory a couple of times. In the more pure modern scientific tradition, theory can be falsified many times thanks to journals, where theories and ideas are exposed to different elements and points of view, where the scientific community can act as a falsifying device. In conclusion, there is no single way to achieve the perfect number of falsifications to accept or reject a new theory.

#### b) Lakatos

Lakatos, like Popper, did not write a methodology for economics. However, their contribution goes beyond the scope of one science to concentrate in the way science is done or more accurately, created. Lakatos, unlike Popper in his view about scientific



process, was more concerned with scientific progress and the generation of ideas to contribute to the growth of knowledge. He did not neglect the need for falsification but only in some parts of the theory and emphasised a basic core of the theory required to be immune to judgment and criticism. The aim is to maintain a line of thinking where the scientist can know he or she is moving towards some specific objective and within well defined boundaries. Contrary to Popper and Kuhn, Lakatos looked for general and interdisciplinary approaches in order to avoid dogmatism and methodological monopolies.

Lakatos' main contribution is the development of the Methodology of Scientific Research Programmes [MSRP] (De Marchi and Blaug (1991) where he established the "needs" to do science. These are basically two:

1. The hard core of the theory, basic knowledge no susceptible to be falsified and which directs the aimed progress.
2. The theory's protective belt, regarded as a set of empirical tests already demonstrated in the field and able to provide the limits of what is to be done.

One of Lakatos' main arguments is the idea of not rejecting those theories (or research programmes) which promise some contribution until other programmes are being developed as substitutes. This liberal approach to science was based on the idea that relevant experiments are infrequently seen *per se* when analysed retrospectively.

#### A critique of Lakatos' methodology

One of the main problems seems to be the lack of forceful definitions to explain concepts such as "hard core theory" or "competitive research programmes". This last concept leads to other problems like how the scientist can predict future weaknesses of a present theory. Lakatos did not provide any mechanism to solve this problem and what is more, there is no explanation on how to identify those "competitive programmes".

Even when in later papers he accepted the difficulty between conceptualisation and explanation<sup>1</sup>, it is still unclear what should be contained in each one. According to De Marchi and Blaug (1991) researchers dedicated to work only at theoretical level (such as those in the field of philosophy and humanism) might find themselves working in conceptualisation, while those undertaking empirical research are likely to be working in the explanation field.

Another critique of Lakatos has been that although he wanted to create an opposite approach to science from that of Kuhn and particularly of Popper, he brought forward many of their concepts and used them ironically as the “hard core theory” for the development of his MSRP.

In economics, Lakatos’ approach can be used to explain the neoclassical perspective and capital accumulation as sources of growth (De Marchi and Blaug, 1991; Blaug, 1992). Nonetheless this argument still seems to be under scrutiny due to the ambiguity of the terms (Hard core theory, paradigm, etc) and the possibility of adequacy from researchers to adapt theory to certain types of methodological process (Hands, 1993).

### c) Kuhn

Kuhn’s perspective takes a radical approach from that of Popper’s. His main assertion is that science has long periods where the status quo remains unaltered, as opposed to Popper’s notion of an evolutionary and dynamic science. Kuhn (in Blaug, 1992) proposes a set of basic historic assumptions in each discipline that serve as the disciplinary matrix or paradigm for current Scientists.

Normal science tries to keep the natural events in an inflexible box provided by the paradigm, moreover, there is no space for new discoveries since most scientists are not keen to develop more theories and criticise those who do.

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<sup>1</sup> The former refers to the way science defines terms to use them as hard core theory and the latter deals with the way phenomenon are described in terms of their relationships with other theories and how they are portrayed with the current knowledge and thus generate more knowledge.

Kuhn focused his attention on describing how science should be approached (Pheby, 1988: p.39):

1. The determination of significant facts;
2. The matching of facts with theory;
3. The articulation of the theory.

The determination of significant facts represents an attempt to avoid redundancy when describing a problem. What facts are really determinant in the problem must be the main concern for the researcher. In this case, the paradigm provides the limits to conduct the investigation and to discern between what is relevant and what is not in terms of problem solving.

One of the main problems of traditional science is finding an explanation in terms of theory that already exists. Matching facts with theory is inadequate according to Kuhn because there are events still not explained by modern science. As opposed to Popper's view, Kuhn suggests that science must not be concerned with testing the paradigm (to adapt the facts to the theory), but to explain those facts that do not fit into the theory.

As a result of explaining new evidence not envisaged into the paradigm, there is a need for articulation of theory if the scientist wants to contribute to science. This new body of knowledge must be subject to a set of rules in order to make it applicable in future events and consequently to become part of the new disciplinary matrix or new paradigm.

#### A critique of Kuhn's methodology

In economics, Kuhn has been broadly criticised due to the looseness of the term "paradigm" or in a few words, what is to be included and used to explain new phenomenon.

Having argued that the philosophy of science must be separated from its historical perspective, Kuhn did not provide a method to undertake such an approach. In this way, he also neglects the notion of "synthesis" and the capacity to learn from old



theories and even to update them, which raises doubts about the relevance of Kuhn's approach.

Since Kuhn is against any link between history and science, the learning process of econometric modelling is put aside. Hausman (1992) supports a position in which econometric models are a product of historic advances and also portray the transformation of the analysed units (countries, regions, cities or communities), consequently Kuhn's vision of "scientific method" is inapplicable to economics. Although such argument would seem logical, some authors in the 1960s and 1970s discussed whether or not Keynesian economics would be a good example of Kuhn's notion of science.

It would be unfair not to mention that Kuhn or Lakatos provided more for economics than Popper. Kuhn was concerned with methodological description rather than prescription as in the case of Popper and Lakatos. However, it is imperative to recognise that Kuhn's schema does not fit exactly the scientific practice of economics, and as Pheby (1988: p.53) says, "no one methodology can achieve this".

It must be recognised that there are other well-known economic methodologies (Keynesian, the Austrian school, Marxist, amongst others) but in some way they are a derivation on the ones already presented in the current section. Besides, the discussion of these approaches would be far beyond the scope of this section.

To sum up, it should be recognised that although these three methodological approaches were not created specifically for economics, they do provide the rules for scientific research and knowledge generation in any discipline. Since there is no perfect methodology and each problem has its own peculiar characteristics, a combination of the three perspectives arises as a valid alternative to the provision of an adequate methodology for the current research.

The application of a single approach would be inadequate due to the nature of a PhD thesis, which assumes the proposal of "new" ideas sustained by previous knowledge. The proposal of such "new" way to assess the economic development level of cities would defy Popper's vision of science because I would not be falsifying any previous

theory, but for Lakatos, I would deserve the opportunity to present my ideas because they would seem reasonable under the perspective that the problem analysed is relevant in theory and praxis for the society. Yet, in Kuhn's perspective this piece of research would prove to be "correct" since the contribution is based on previous knowledge tested to be "true" with empirical evidence.

The concluding remark is as follows; there is not a perfect methodology to do science, but there are some rules to be followed in order to generate knowledge in any field. Consequently, it is important to develop a set of statements based on tested theories if the findings are to be considered valid scientifically. It seems natural to apply a combination of methodologies to create one *ad hoc* in order to improve past results or generate new ones and expand theories and policies to enhance the social system.

## 5.2. Relevant studies in local economic development

### Blakely's study

One of the most complete and well-defined urban development models is provided by Blakely (1994). His model is composed by a set of variables with no explanation of the data contained in each of them. Blakely's model (p. 53) is as follows:

Local/Regional development =  $f$  (natural resources, labour, capital investment, entrepreneurship, transport, communication, industrial composition, technology, size, export market, international economic situation, local government capacity, national and state government spending, and development supports).

As can be appreciated, the model is not specific and only contains the name of general categories of data rather than specific variables to be analysed in a formal econometric model. However, it has to be noticed that the model has been developed only at theoretical level and there is no evidence of any empirical attempt to test the model.

Blakely's proposal results in a good attempt at visualising urban development as a different concept from the national level and although there is an emphasis in physical

and locational factors, the model is able to show the key factors to be studied in urban or city economic development.

Some of the limitations of the model are the lack of weighting for the variables and also a lack of definitions for the factors, thus all of them seem to have the same relevance in the concept, something not possible in the real world. In the second case, this provokes ambiguity between the conceptualisation of what is meant by factor and variables.

The incapacity of the model to distinguish between variables (particular units of analysis) and factors (sets of units of analysis) deserves some clarification. For instance, capital investment is a direct variable not capable of separation into more variables. On the other hand, the concept of labour could be interpreted in various ways such, availability of people to be incorporated into the labour force, level of training of these people, productivity, for example. As may be inferred, it is also a problem in terms of urban policy for city authorities due to a lack of hierarchy to establish in which factors or variables should a bigger allocation of resources be made if development is to occur.

Unfortunately, there is no evidence of any implementation of this model in the academic literature to assess its performance in practice.

### **Herrschel's study**

Herrschel (1995) provides a good guide to assess economic development at urban level when he compares the economic policies of England and Germany combining primary and secondary data. His approach emphasise the spatial components of development such as land use and site, workspace, infrastructure, science and development parks, to name but a few. The complete model is:

$\Delta$  economic development = f(Employment) \* f(land use + workspace + infrastructure + R&D + Science and technology parks + training level + local business support + local initiatives + community cooperation with business)



Using local data regarding development initiatives, Herrschel compares two ways of tackling development problems: the English and the German. In the former, development practices are undertaken by non-government organisations with a mix of public-private partnerships and in the latter, the state (or regional) government is in charge.

The model's main contribution relies on its ability to assess the impacts of local policies in the generation of employment and higher income. Yet, the occupation of land by companies also represents a form of measuring increasing levels of economic development. In this case, the utilisation of workspace as a dependant variable to evaluate local policies to attract companies and generate more employment seems to work adequately.

Some drawbacks are present in the model as well. The first one deals with the way variables are measured in the two countries used by Herrschel. Unemployment rates in Germany and Great Britain do not coincide due to different approaches in unemployment registration. Therefore, in Great Britain unemployment is measured in terms of people claiming benefits while in Germany all people of working age and not employed are considered unemployed. This increases the unemployment rate for the latter country and also helps the model provide more "representative results" since local policies seem to have bigger impacts than those in England.

The emphasis in spatial issues in the study also posits a problem mainly due to theoretical conceptualisation about economic development. For instance, more productivity in the labour force can lead to two forms of action. In the first one, the capital owner can make some people redundant because the same workload is now achievable with fewer workers. In other words, the same job could be done now employing less people (*ceteris paribus*). In the second case, redundant people are used to expand production. If workspace and labour productivity are related in the same model there is a possibility of having statistical dissociation. More productivity could lead to make employees redundant, which would reduce the space required to carry out production.

### Cheshire and Gordon's study

Cheshire and Gordon (1995) take a different approach from those presented before in the conceptualisation of the driving factors in economic development. Firstly, competition is for the authors the main force to be associated to any economic development process since direct investment can only be located in one place at a time. Consequently the competitiveness level of cities determines their development path. How attractive the city may be is another component of the analysis without allocating too much emphasis on it, although the term is mentioned but not defined nor represented in the variables selected.

Their study only focuses in three regions of Great Britain and combines primary and secondary data but the central core of the study relies on telephone and in depth interviews with firm's senior managers.

They attempted to explain economic development gains in terms of city competitiveness in this study. Cheshire and Gordon explain how cities can have *in situ* growth if some competitive factors are taken as driving forces. These are:

- a) Location accessibility
- b) Proximity of markets and suppliers
- c) Availability of premises
- d) Labour and premises costs
- e) Infrastructure
- f) Business services
- g) Labour skills
- h) Congestion

The dependent variable is change in employment. The authors argue that local economic change is more than a simple process associated to inward investment or relocations of industrial activities. What is more, their argument extends to the fact that it is not always the case that a loss of jobs represents a drop in development levels because productivity gains and business expansion play an important role in terms of absorbing part of the unemployed labour force.

One of the weaknesses of the study is its limited sample of city/regions, but in spite of this, it provides a clear idea about the interaction between urban economic development and competitiveness and portrays neatly the main component of the former; change.

The low number of variables contributes notably to the reduction of the complexity of the analysis but also leaves aside some important elements such as the role played by the city to attract investment. It could be said that Cheshire and Gordon do not attribute any active role to the city's authorities to increase their competitive level.

The methodology used in this research combines data from telephone and in depth interviews to analyse the most important location factors or variables for companies. A good complement to this research would be the inclusion of data from local authorities on what they perceive as the most important attributes that a city must have to be successful in attracting investment and also the information provided in the cities project's business survey.

In the way the study is organised, there is no evidence of correlation between all the variables. As in the case of Herrschel (1995), space plays an important role but only as another factor not as the sole condition to explain economic development. It is important to note that infrastructure appears as common factor in both studies.

### **Bramezza, van den Berg and van den Borg's study**

The authors point out that change, growth and relocation are at the core of the competitive process. An important finding in their study is that economic growth in a city is associated not only with the kind of industrial base it possesses but also to the average size of the companies. Those cities with larger companies than the average tend to perform economically better than those with predominately small ones.

This study utilises data from the TeCSEM survey, to explain according to the authors, what makes the Randstad one of the most competitive European regions and the role each city in the region plays. The research establishes the basis for understanding the role of the industrial base and how relocation variables influence the outcome of the competitive process. Extending this argument, they maintain that competition has to



be a natural process to induce development firstly to the cities independently and then to the region as a whole. The explanation derives from the growth of sales from local companies distributing the profits amongst the city through the workers, causing spillovers. Bramezza et al (1995) coincide with Cheshire and Gordon's argument about change as the central element for urban and regional competitiveness and as one of the sources for development at city level.

Although the study is consistent with the results of other research, there are some issues to be analysed in order to understand the real dimension of the relationship between competitiveness and economic development.

Firstly, competitiveness in this study has been defined in terms of capabilities to generate wealth while the competition has been neglected into some extent. The authors assume that these cities (those composing Randstad region) complement each other in their functions, therefore Amsterdam is a financial capital, Rotterdam an industrial centre and so on. This explains why the Randstad region is one of the most competitive in the world.

Secondly, as it has been argued before, the competitiveness process is not under total local government's control and there is not a proposal to complement the study in some way to portray more generally the impact of competitiveness in the local economic development level of cities. Once again, the city is seen as a static entity with no participation in the development process and it is seen to be at the mercy of companies.

Thirdly, in addition to the lack of an active role in the economic process, there seems to be an emphasis on relocating companies and few is said about the competitive level of the cities in terms of foreign companies, the question could be, those new companies perceive the "advantages" of the region or this relocation obeys to internal incentives to convince these companies not to leave the country (Holland)?

Finally, almost nothing is said about the industrial sector from where the sample was drawn.

### Wong's studies

Wong (1998, 2001) centres her attention on the factors and variables associated to economic development in cities. The first study deals with key actors in the process of economic development. The data came from a survey applied amongst practitioners in the North West and Eastern regions of England. According to the author, these regions were selected because they present contrasting characteristics in terms of economy and geography.

The first study (1998) reveals that there are common goals between the different economic actors in the community. This term is preferred over urban area or city due to the European funds assigned to tackle economic declining in “specific” communities rather than in the “whole city”. Urban regime theory is used to create the research and methodological framework, centred in policy issues with no interests what so ever in the economic part of the process.

However, she questions the way urban regime theory envisages the local economic development in the urban contexts and argues that in the case of Great Britain, this theory has failed to explained why companies form partnerships with other organisations to improve the local community and the city in general. It can be said that this study reflects the political side of economic development issues in cities and communities, while at the same time it analyses the politics of participants in the economic process. The questionnaire applied combines questions already used elsewhere with questions formulated by the author.

The rate of response was relatively high (compared with the traditional standards) due to its shortness and ease of response to the questions. In order to support the “new questions”, Wong utilised some sets of secondary data which provided a very good reference.

In her most recent research, as a continuation to her study about determinant factors in local economic development, Wong (2001) analyses the impact of one specific factor: quality of life. Following the questionnaire tradition, Wong asks practitioners to assess the relevance of different variables related to quality of life, finding out the

importance attributed to the factors by executives in charge of making decisions to locate companies.

Wong's second study makes a clear difference between two concepts: factor and variable, where the latter is contained in the former. It also establishes the mechanism to evaluate isolated factors associated with urban economic development but fails to explain if quality of life really is relevant in an isolated way or if the factor is relevant in conjunction with other factors. For instance, is quality of life a relevant issue once a location has the lowest start-up costs, or is it relevant no matter what other factors do not comply with the maximisation or minimisation criteria?

As can be appreciated, Wong's local economic development studies have been traditionally focused on the practitioners' perception, which is subject to many drawbacks. Amongst them:

- a) The political environment of each part of the sample. Not all the cities have the same political traditions or are on the hands of the same politically oriented governments. Those actors living in cities "in the hands" of left-wing parties will tend to have a different political opinion from those living in right-wing managed cities.
- b) Survey conditions. As in any survey, the conditions under which the questionnaire was applied can make the perception differ between places. Nothing is said about these conditions in the articles.
- c) Once again the city is taken as a static entity and its inherent elements such as population and economic conditions are not taken into account to analyse perceptions.
- d) Drawing upon the same argument, the population in the cities is not included as part of the sample to at least corroborate results. Does population consider quality of life factors important to decide whether or not to live in a specific city? The debate is still open to comments in the academic literature.

### **Wolfson and Frisken's study (2000)**

Another way to study urban economic development issues is by taking "cases" under the argument that each city is different and has its own characteristics that make the



comparison impossible. Advocates of this trend are Wolfson and Frisken (2000) who present 6 cases of how urban economic development must be examined under the globalisation framework. Their claim deals with the way cities are being transformed by the global strategies of companies and national governments. Since the paradigm of the nation state is not valid anymore, countries have to transfer some powers to local governments in order to improve the services for the inhabitants.

Rather than examining traditional factors and variables in Canada, Wolfson and Frisken (2000) argue that the strategies to achieve an economic development level are the most important issue. Local government strategies are responsible for making the city grow. Therefore, their methodology is based upon the analysis and synthesis of regional and local economic strategies aimed at improving the general conditions of the urban space.

Their methodology underlines the notion that local government and not businesses, is the generator in the development process. This is supported by their comparison of strategies implemented by the six municipalities in Canada.

An important contribution is the differentiation between regional and city economic development. Wolfson and Frisken take the municipality (county in the U.S.A. or council in Great Britain) as definition of city and the sum of all the municipalities as the region. They find out that competitiveness and investment attraction play a very important role in how the municipalities create wealth. However, competitiveness is more defined in terms of city competition for resources and for the attraction of inward investment.

One problem of this research is the lack of strong empirical evidence to support their opinion regarding the factors (or variables) correlated to those strategies leading to economic development in the municipality.

#### **O'huallachain and Satterthwaite's study**

Focused on economic development incentives and their effect in growth patterns, O'huallachain and Satterthwaite (1992) present the typical econometric model where a

large set of variables are grouped in order to explain the interrelation between them as a source of evidence to pull in companies. Only secondary data are used in the model.

Information on 37 manufacturing and service sectors from the U.S.A.'s metropolitan statistical areas is used to evaluate the effectiveness of economic development incentives. The dependent variable used is employment growth and 20 independent variables were grouped into 9 factors. The principal statistical findings demonstrate that just two economic development incentives were associated to job creation; enterprise zones and university research parks.

Although this research was not applied to cities but to industries, it shows another way in which economic development can be measured.

Some factors are represented only by one or two variables and in some cases the representation could be subject to question as in the case of the factor "social structure", represented only by the variable "percentage of black population". Doubts arise when other minorities are common in many American municipalities. For instance, Los Angeles as well as New York, Houston, San Francisco and Chicago have other minorities as important as the black ones, such as Latino and Asiatic, and these need to be incorporated if the model is to be reliable.

### **Gripaios, Gripaios and Munday's study**

The attraction of inward investment by cities and its impact in local economic development is reported by Gripaios et al (1997). The research presents a comparison amongst Bristol, Cardiff and Plymouth within an economic framework based on attractiveness factors and their variables. They evaluate some attributes of these three cities to attract investment and consequently generate more jobs. At the same time, a questionnaire is applied to inward investors (foreign capital exclusively) locating in one of the three cities after 1979 to determine what were the variables taken into account in selecting the place.

This paper contributes in various ways to identify the role of investment issues in economic development. Firstly, it provides a list of variables associated with the investors' preferred attributes to select a place. Secondly, the investment is seen as a

mechanism to reconstruct the city, another way to define urban economic development. Not least important is the fact that the paper provides empirical evidence about the relationship between investment and economic development, where the former explains a small number of new jobs generated in the 1980's and it had almost no impact in the overall economic performance of the city.

Methodologically, the paper is based once again on a questionnaire, but this time the sample is real investors who have already put their money into the city and are now seeing the profits of that economic decision. In addition to changing the perspective from city competitiveness to city attractiveness factors, the authors do provide the city with a more active role as "economic player". The variables envisaged in the study transfer more responsibility to local governments as generators of wealth in terms of convincing investors to locate in their territories.

Although the findings claim that inward investment had little impact on job creation, this might be attributable to the way the sample was chosen. Some joint-ventures and take-overs were not included leading to a loss of representation by the sample. Even though the authors justify this action arguing that they were focused on "inward investment which is truly additional" (p. 582), the reality is that even those investments not adding value to firms, could have a high impact on cities since money has to be transferred in some way to complete the transaction in form of fees to lawyers, consulting companies, and so on.

### **Wei et al's study**

The study undertaken by Wei et al (1999) in China to explain the determinants of foreign direct investment at regional level is another example of attractiveness as the driving force to generate economic growth and development in cities. Eight factors are considered to explain discrepancies in the location of foreign direct investment. Even though economic development is not the central issue in the research, it does select the factors in terms of their impact on job generation. Also important is the fact that the "regions" are technically city-regions, in a few words, cities surrounded by large metropolitan areas.



In contrast with Gripaos, et al (1997) research, where primary data lead the analysis, Wei et al, only work with secondary data from the Chinese census and utilise panel data analysis as their statistical tool.

This paper provides a good insight into the use of panel data to explain why foreign direct investment is unevenly distributed along a country, according to the relevance of factors selected from previous research. Therefore, attractiveness factors are linked to GDP growth in urban centres according to the empirical evidence, reinforcing the argument presented before.

The model is econometrically strong and has no weaknesses due to different statistical tests carried out. The availability of data is not a problem since there is a large data series since 1984 to 1996, to run a robust statistical model. Surprisingly, at urban level the utilisation of panel data models has been little used amongst academics. On the contrary, at national level there are abundant examples of models by international organisations such as the World Bank, the Inter-American Development Bank, and the International Monetary Fund.

So far, all the models presented do not envisage possible economic asymmetries within countries. Most of the analyses assume an even distribution of resources such as infrastructure, educational budgets, salaries and wages. Yet, it is assumed that technology will be transferred all along a country and between countries without any restriction which in the long term would lead to a convergence. The new economic theory has found no evidence of this. On the contrary, differences between poor and rich countries (developed and developing countries as they are formally referred to) and between poor and rich regions in the same country have increased. Unfortunately, in a country like Mexico, the uneven distribution of resources and erroneous policies led to unsustainable disparities in its regions and cities which created social unrest in the most disadvantageous places.

This research intends to over that gap by hypothesising that in the sample of cities, all of them have the same economic resources. This is the onset of the whole empirical chapter.

Table 5.1 summarises some of the methodologies applied to the study and research of urban economic development briefly presented in this section.

The table comprises three driving forces:

- 1) Competitiveness, how to improve the productivity level to increase wealth and reduce depravation in the city?
- 2) Attractiveness, how to retain and attract more investment to generate employment and avoid economic declining?
- 3) Policy strategies, how to transfer power and activities to local governments in order to make them more capable of inducing growth and development efficiently?

**Table 5.1: Urban economic development methodologies: traditional approaches**

Driving forces of LED		Methodological elements				
		<i>Data gathering</i>	<i>Source of information</i>	<i>Statistical approach</i>	<i>Urban policy aim</i>	<i>Dependant variable</i>
	<i>Competitiveness</i>	Secondary data mainly	Census and local statistics	-Rankings -Discriminant analysis	-Better distribution of resources -Productivity gains	-GDP per capita -GDP growth
	<i>Attractiveness</i>	Surveys and secondary data	Investors and city statistics	-Regressions -Rankings -Panel data	-Urban regeneration -Investment retention and attraction	-Job creation -New companies -Change in FDI
	<i>Policy strategies</i>	Review of cases	Local authorities and policy leaders	NA	-Re-Allocation of political power	-Job creation -Pop. Growth

The difference between attractiveness and policy strategies relies on the role taken by local governments, while strategies are aimed to intervene in the local markets conditions and economy, attractiveness factors are shaped to create fair conditions in the market, not to intervene on it. Thus, local authorities accept their role as promoters of the place rather than organisers of the economy.

The last table is by no means exhaustive, but it does represent the most relevant elements embraced by academics and practitioners in contemporary research in the fields of city competitiveness and attractiveness.

### **5.3 Unit of analysis and other relevant definitions**

The role of cities in economic development is vital because cities and not regions (due to political regulations, very well defined governments and borders) provide the conditions for human and financial capital accumulation. City size and density allow scale and agglomeration economies, indispensable conditions for economic growth. The growth of urban areas makes possible production efficiency and the adoption of new technology to obtain full growth capacity in a city. All these arguments make the city the centre of attention in this piece of research.

#### **5.3.1 Defining the city and the region: differences and similarities**

Why the city and not the region or the country as the unit of analysis? First of all, because cities are now the focus of analysis and very much has been studied at country level. Models of almost any kind are available in academic and practitioner journals, magazines and even newsletters. Data at country level are not difficult to find and due to the variety of publications it is easy to compare and contrast results within and between countries.

Models at national level serve to produce policies to correct any imbalance in the balance of payments and to adjust policies to tackle economic downturns and external shocks in open economies. Central governments have total power to manipulate some components of the national economy in order to achieve growth and better living standards.

At regional level things become less easy to manage. There are at least two categories of regions: those within political boundaries and those involving more than one political unit. In the latter it can be more problematic.



**Table 5.2****Difference in the factors at regional and city level from a business perspective**

<b>Regional factors</b>	<b>City factors</b>
Access to different markets	Transport companies
Cost and availability of labour	Availability of housing
Raw materials ,	Low taxes
Availability of office space	Low union activity
Roads and motorways	Closeness to the final customer
Quality of life	Adequate political climate for business
Climate	Shopping centres
Cost of industrial fuel	Access to railways
Cost and availability of water	Efficient public transport
Financial services	Recreation centres
Political stability	Cost of living

Source: Eisenger, 1993.

There is evidence that a region can contain two or more countries, making the analysis more complicated due to the availability of data in each country, the definition of it, the concepts, the periods for collection, etc. In regions within the same country, the analysis become less complicated but still requires of more assumptions to standardise “effects”. For instance, the case of a large metropolitan area comprised by two different regional governments is common in regional economics. The approach taken to solve this drawback has been to treat the whole area as one place assuming that governments follow the same policies. However, this diminishes the accuracy of models and provides little opportunity to assess local policies.

In the case of the city level, things work in a different way and provide a wider framework for analysis. Besides countries have “discovered” the advantages of having more data at city level to analyse future trends and to evaluate impacts of national policies in a more detailed form. Compared with central governments, city governments do not have much political and economic power but this trend is reversing. Another reason to study cities and not regions is the greater availability of data in most cases. For Mexico, since the 1980 census, data at city level comprises more than one hundred variables, providing the opportunity for an adequate analysis without losing reliability.

But what is the city? The city can be defined as a specific geographical territory with high population density and a local authority acting as both provider and spatial

organiser of the industrial activities (Frey and Zimmer, 2001). O’Sullivan (1993) claims simply that a city is a space with a high population density where exchange is the main force to bring people closely together.

In conclusion, cities provide all the required elements to study the impacts of policies from national and regional level. At the same time, policies and strategies for urban economic development can be particularly evaluated and forecast more accurately, giving useful information to local authorities, companies and urban planners to generate the maximum benefit for citizens.

The concept of “city” implied in this research is the one provided by the Instituto Nacional de Estadística, Geografía e Informática (National Institute of Geography, Statistics and Information Technology) [INEGI] at municipal level. This means that the data gathered for one city are the data at municipal level or the average of the municipalities composing the city. Those urban areas composed by more than one municipality are perfectly defined by the INEGI and take the name of the largest municipality. For instance, the city of Monterrey encompasses the municipalities of Monterrey, San Pedro Garza, Apodaca, Escobedo, Benito Juárez, Cadereita, San Nicolás de los Garza, and Santa Catarina.

**Table 5.3 Main differences between cities and regions**

	<b>Cities</b>	<b>Regions</b>
Composed by	Single unit	Various units
Spatial distribution	Territorial concentration	Concentration in cities and dispersion amongst them
Government structure	One or more from the same region	More than one and may involve other regions
Oriented towards	Internal communications	Links with the other cities
Government form	Council or municipal	Regional or inexistent
Geography	Defined political borders	Borderless
Industrial orientation	Production	Production and trade

### **5.3.2 Growth vs. development models: clarifying the aims**

It is important to differentiate between growth and development models because the methods and the approaches vary according to the aim. Growth models emphasise production and productivity functions and capital accumulation (neoclassical model)

while development models comprise a set of different attributes in order to portray “change” in any of the variables or factors and they also include social and cultural variables in order to capture the social aspect.

Indeed, development models look for ways to “capture” variance in the variables (Krol, 1995; Eisenger, 1993, Wong, 1998) and growth models look for variables which can “capture” accumulation (Aschauer, 2000; Testas, 2000, Martin and Ottaviano, 1999, Cheshire and Carbonaro, 1995).

A very important critique to growth models is that sometimes they are complicated and difficult to articulate for policy purposes. In addition, due to the stress on production functions and capital accumulation, there is little inclusion of government participation or any other more manageable variables (Wilson, 1974). This fact leads to the creation of models which are not very useful for urban policy purposes, which are relevant for any economy because policy and economy are linked.

Econometric models at urban level are important for assessing the impacts of national programmes. What is more, urban economic development models provide policy makers and investors with tools to appraise impacts not just from the central government, but also from other countries and cities. The era of “going global, thinking local” push academics and researches to create flexible models with the possibility of updating as frequently as possible. In this sense, growth models may be considered less flexible due to the nature of their origin: industry. Also, growth models have put at the core of the analysis the industry, and have left aside the role played by governments to encourage investment.

It must be recognised that local economic development models had their roots also in national models, but amendments have been made to capture the differences of the regional and local scale, mainly to study the sources of growth when monetary policies do not exist and taxation powers are very limited.

However, it is not possible to neglect the strong relationship between growth and development as revealed by the literature. To deny a high statistical correlation



between growth and development would be neither correct nor representative of a model to assess policy strategies and economic policies at urban level.

For the purpose of this research, an urban/local economic development model will be constructed using a set of 72 variables grouped into 9 factors assumed to be theoretically associated according to the literature surveyed. The applied technique of modelling will be traditional econometrics because I will be testing a piece of economic theory and policy facts since most of attractiveness variables are regarded as a product of urban policies. This contention is supported by Gilbert (1989) who claimed, "... in doing econometrics we are testing economic theory...The current consensus in that a major role of econometrics in applied economics is that of testing theory and policies" (p.1). What is really the theory tested in this research?

- a) Urban development is a function of a set of variables. So far the great majority of the models analyse between two or three factors, mainly due to a lack of data or a lack of cohesion between variables. Since the chances for a high correlation among variables is high and thus, a reduced model is the most possible outcome, the proposal of a theoretical model could be included as an option for policy purposes.
- b) Hierarchy of variables and factors. Recent research shows that the patterns for selecting locations are changing and development factors may differ between developed and developing countries as well as from city to city.
- c) National policies do increase the gap between poor and rich cities. Much has been said about the economic differences between poor and rich people and almost nothing has been said about differences between rich and poor cities. It is relevant because cities are responsible for wealth generation.

#### **5.4 The rationale for another econometric model in urban economic development**

This section presents some contentions from different scholars who claim that there is a need for more research in urban economic development. The contentions suggest that researchers should include more elements of analysis and also more concepts due to the lack of concluding evidence about the factors impacting on economic development.

- “Localists argue that new political and economic processes bring a renewed political salience to cities and localities... a new sense of local political identity, and a shifting down to the local level of many institutional and regulatory structures that previously were the exclusive preserve of the nation state” (Graham, 1995; p. 136).
- “There is still a debate about the factors associated to local economic development (Wong, 1996; p.136).
- “...recent research has increasingly turned to seek additional or alternative explanations for new models of urban development” (Wong, 2001; p. 1156).
- “The international economy models are neither enough, nor many of them adequate, to foster the development processes. Without denying the relative success of such policies, we have to accept that there are increasingly doubts associated with their capability to correct determined chronic types of imbalances” (Precedo, 2000; p.125).
- “Globalisation demands reformulation of past research paradigms. For instance, central place theory, regimes and growth machines, class and race politics...are not able to explain the new urban interactions” (Clark, 2000; p.3).
- “...such econometric models (urban and regional) will have to be adapted to the geographic, cultural, and socio-economic idiosyncrasy of the areas affected because experience proves that to reproduce the implementation of foreign conventional development models has caused, at least, contradictory results” (Precedo, 2000; 126).
- “The spatial inequality of local and regional development has stimulated local actors to rediscover place identities and to react by formulating economic and marketing strategies to enhance the competitiveness of the locality in the national and global economy” (Wong, 1998; p.707).
- “Competitiveness and attractiveness should be vital elements in the modelling of urban economic development, at least in the Mexican case” (Serrano, 2000; p. 57).

Although the sample of contentions is not exhaustive, they “remark” the need for new approaches. Considering this fact, I am taking the risk of arguing that city competitiveness and attractiveness factors determine the economic development level and capacity of cities, hypothesis to be tested in the following chapters.

## **5.5 Contributions and expected results**

### **5.5.1 Contribution in terms of factors**

This thesis proposes the analysis of urban economic development in terms of nine factors:

1. Human resources
2. Business Climate and suppliers
3. Technological support
4. Urban economic conditions
5. Physical infrastructure
6. Quality of life
7. Promotion activities and city image
8. Urban market
9. Government

Few researches have used so many factors at the same time, either by a lack of data or simply due to a lack of scope for approaching the problem in such a way. Approaching the issues of economic development with more factors provides a better way for policy development since in many cases local authorities are restricted to design strategies and policies.

### **5.5.2 Contribution in terms of variables**

I intend to create a model capable of simulating the impact of urban policies on the economic development level of cities. In this case it is important to have a large number of variables to be able to capture with the model most of the policies. A model with just a few variables might be statistically accurate but will not provide any insight in terms of specific variables selected as outputs if they are not included.

The thesis contribute by presenting a large set of variables, 72, a statistically sample of data portraying most of the indicators used by policy makers and non-elected



bodies to carry out different analysis. The variables have been collected from various academic references derived from empirical and theoretical work. It has to be mentioned that the variables in this research might be grouped in different ways according to the perspective adopted by the researcher and does not represent a problem because the statistical analysis will give evidence of the representation level.

**Table 5.4**  
**List of selected variables for analysis**

**Technological support**

- Registered private expenditure in R&D, in Mexican pesos/Total population.
- Registered public expenditure in R&D, in Mexican pesos/Total population.
- Total expenditure in R&D (gross expenditure)/Total population.
- Number of internet connections (including households and companies)/1,000,000 population.
- Post-graduate students/100,000 population.
- Number of research and development centers/100000 population.

**Business climate and suppliers**

- Number of credit institutions and building societies/10,000 businesses.
- Number of insurance companies/10,000 businesses.
- Units of transport (trucks)/manufacturing companies.
- Freight companies/100 manufacturing companies.
- Bank deposits (M1+M2)/total population.
- Establishments for commerce and general services/10,000 population.
- Establishments of professional and technical services/10,000 population.

**Human resources**

- Number of union strikes/100,000 workers.
- Number of union conflicts/100,000 workers.
- Index conflicts/Strikes
- Number of elementary schools/population under 12 years old.
- Number of universities and post-graduate institutions/100,000 inhabitants.
- Unemployment rate.
- Total population aged 15 years-old or younger.
- Illiteracy rate.

**Urban Market conditions**

- Total population.
- Total employed population.
- Total remuneration in the service sector in Mexican pesos, average per unit.
- Total remuneration in the commerce sector in Mexican pesos, average per unit.
- Total remuneration in the manufacturing sector in Mexican pesos, average per unit.
- Population growth rate, 1980-1990, 1990-1995, 1995-2000.

- % of population earning more than 5 times the minimum salary.
- % of population earning less than 1 minimum salary.
- % of population earning up to 2 minimum salaries.

#### **Quality of life**

- Average number of people per household.
- Number of hospital beds/10,000 inhabitants.
- Percentage of households without potable water supply.
- Percentage of households without electricity.
- Percentage of households without sewerage.
- Percentage of households without cement floor.
- Death rate.
- Public libraries/100,000 inhabitants.
- Delinquency level; homicides/offences by 10,000 inhabitants.
- Number of environmental complaints/1,000 manufacturing companies.
- Number of doctors in the NHS/10,000 inhabitants.
- Ratio Homicides/offences
- Crime rate

#### **Promotion activities**

- Total expenditure in city promotion/population, Mexican pesos per capita.
- Total international flights/100,000 international tourists.
- Total national flights/100,000 national tourists.
- International tourists/100,000 population
- National tourists/100,000 population
- Number of hotel rooms (5 stars)/10,000 tourists.

#### **Economic conditions**

- Total public investment in Mexican pesos/Total population.
- Urban inflation rate in the city.
- Value added manufacturing companies, average per unit.
- Value added service companies, average per unit.
- Number of commercial units/100,000 population.
- Total revenue in the manufacturing sector: average per unit.
- Total revenue in the service sector: average per unit.
- Total revenue in the commerce sector, average per unit.
- Economic dependence factor (employed population/total population).
- Capital accumulation manufacturing sector/100,000 manufacturing units.
- Capital accumulation service sector/100,000 service units.
- GDP per capita.

#### **Government**

- Local government total revenue/population, taxes per capita collected.
- Local government total social expenditure public works/population.
- Local Government investment in housing, per capita.
- Housing built by local government/total population in D strata.

**Physical infrastructure**

- Number of construction companies.
- Total supply of electricity, average per company. Includes only service, commerce and manufacturing sectors.
- Total railways systems/10,000 manufacturing companies.
- Industrial land, total occupied area in km<sup>2</sup>.
- Km of roads and motorways/Total population.
- Water supply: average disposable volume per day in cubic meters.
- Distance to the United States of America border or to American Territory.

A very important contribution is the grouping of the variables into two categories, competitiveness and attractiveness. This leads to the conceptualisation of urban economic development in a broader perspective, contributing in this way to the generation of more options and more points of reference for urban policy. According to the literature, those variables associated to attractiveness are more susceptible to government intervention than those of competitiveness. Local governments might have now a guide about whether or not their intended plans are realistic in terms of policy design and economic strategy.

Why 72 variables and not more or even less? The number of variables is a product of two conditions: firstly, I decided to include those variables that are directly affected by decisions made by policy makers in the urban context. Secondly, I wanted to take advantage of the availability of fresh data from the 2000 Mexican census. In this case, more variables and more factors might provide the opportunity for a broader analysis and a deeper study of causes and effects.

Nonetheless, there is an implicit risk in including many factors and variables, and it is the possibility of having high correlation coefficients reducing considerably the number of variables and factors represented in the model. If this is the case, the proposal of a theoretical model could be the best solution.

**5.5.3 In terms of its applications to urban policy**

More variables and factors contribute by providing more points of analysis as well as more starting elements for developing strategies, policies and programmes to tackle some of the problems faced by regional, local authorities and other organisations in charge of economic development. Yet, a model like this will provide the information



required to assess policies in a specific city including possible reactions by other cities. Also there is an opportunity to evaluate national policies at the urban level and see the different effects in the cities. It contributes to solving the question whether or not national policies designed by the central government are the best way to balance the wealth of the Mexican cities or if the cities must have their own economic resources and powers to design their plans to tackle the development debate.

#### **5.5.4 Contribution to economic theory**

To demonstrate whether or not it is possible to associate and portray competitiveness and attractiveness factors to urban development represent an important contribution. In many ways, testing a new theory or combining theories to explain new paradigms, (as in the case of this research) helps understand more deeply the economic implications of different policies. Bringing together city competitiveness and attractiveness variables provides a valuable opportunity to create models with a social perspective.

The formality of mathematical models supported by Krugman yields to a formality of theorisation in this case, where rather than the mathematical procedure, what really matters is the interaction between attractiveness and competitiveness to find answers to the development problem. The formality of the model might be dispensed in favour of findings to really create a way to assess economic development by using competitiveness and attractiveness factors.

#### **5.6. Summing up**

This chapter has provided the theoretical framework to understand the basics of the empirical work following in the next chapters, as well as the expected way in which thesis will contribute to the urban economic knowledge. In the first section, references about the “classic methodologists” were given in order to illustrate the search for the “perfect” methodology. It was demonstrated that there is not such a “unique approach” to science creation. Today, the applicability of diverse methodologies is the common practice amongst the academic community. Neglecting past theories or ‘plundering’ from fashionable ones is not a good practice if the aim is to really contribute to the understanding of the social phenomenon.

At general level Popper, Lakatos and Kuhn give a good approach to what is or what is not science. At the urban level, there is a need for more specific frameworks to study the economic development process of cities. It is here where the next section arises, presenting the traditional studies of urban or regional economic development in the last ten years. Such a short period of time is due to the vast transformations of the world in the past decade where various traditional paradigms are losing their applicability (Clark (2000)). I selected these studies because they present a large variety of statistical tools and ways of gather information, pursuing the same aim but with opposite approaches. Once again the evidence suggests that there is not a single way to do research in urban economic development. What is more, there is still a need for more models due to inherent characteristics of particular cities within countries.

In order to avoid confusions between growth and development models, I presented the main convergences and divergences in aims and formats briefly. This issue is important to locate the intended model in the proper field and to avoid possible confusions about why some factors and not others, were selected or why such approach and not other. This explanation is able to increase the focus of the research. At the same time I add more justifications to create another urban development model. The literature survey, particularly the quotations, points out that due to the youth of urban economic development as a “real” branch of positive economics, there is need for particular models at city level and more in developing countries.

It is also concluded that there is still plenty of room for more research in the area of urban economic development, provided a more open approach is taken by the researcher. This “open approach” can be interpreted as the inclusion of economic concepts not considered before as core elements in the context of economic development. Such is the case of urban attractiveness that has dealt mainly with renewal programmes in city centres, by far a very limited and erroneous scope. Urban competitiveness has been mainly unattached to other economic theories either by a lack of interest by scholars or by a lack of a background to support such link.

Finally, the justification for putting together all these concepts and what it is expected out of this experiment is provided.

The next chapter gives all the methodological information for testing the hypotheses and research questions as well as the variables and sampling of cities included. Also the econometric models are derived and tested.



# Chapter 6

## Methodology

### Introduction

The objective of this chapter is to present the methodology followed to prove a set of research questions and hypothesis as well as the limitations and extensions of the current research. Also, the current chapter develops the steps to construct a model to assess the local economic development level of a sample of cities from two driving forces: competitiveness and attractiveness. I also discuss the aims and scope of the model in terms of pragmatic and theoretical approaches where the concept of the “city” as a nucleus is at the core of the analysis.

### 6.1 Hypotheses and research questions

#### 6.1.1 Hypotheses

*-All Mexican cities have the same economic characteristics.*

This hypothesis intends to prove whether or not Mexican cities have the same opportunities to growth and develop. Finding economic asymmetries provides the structure to establish what cities are in a development stage and what in a growth stage and in this way, the cities can be ranked according to their positions in each category.

*-City attractiveness induces growth and development.*

The aim of this contention is to prove the impact of city attractiveness on the growth and development process of cities. By proving that attractiveness factors lead to growth in the short term, it would be possible to approach the so-called development problem from another perspective where politicians could measure the impact of their strategies more accurately.

*-City competitiveness is the mechanism to maintain the city’s economic performance.*

In some cases the problem for local authorities is how to maintain their economic level once they have achieved a good economic performance. The proposal is that by focusing on competitiveness factors their chances of success would increase with the consequent improving of living standards for their inhabitants.

### 6.1.2 Research questions

1. Are the cities in the sample having the same opportunities for achieving economic development?
2. Is local economic development a function of competitiveness and attractiveness?
3. What are the most relevant competitiveness and attractiveness factors inducing the highest possible local economic development?

### 6.1.3 Specific objectives

Objective 1: to demonstrate the economic asymmetries of the Mexican economic system by analysing city competitiveness and attractiveness factors.

Objective 2: to determine the main variables affecting the city performance and their hierarchy in the selected sample.

Objective 3: to develop an econometric model to portray the function of economic development for a sample of Mexican cities in terms of competitiveness and attractiveness variables.

## 6.2 Justifying the statistical method

### 6.2.1 Comparing panel data with other statistical methods

Panel data are used traditionally to identify one or more subjects and observe them over time. This allows us to study relationships over time including the dynamic aspect of the problem. Panel data represents a combination of regression and time series.

- As with regression, cross-sections of subjects are collected.
- With panel data, each subject is observed over time.

There are several advantages of panel data compared to data that are either purely cross-sectional (like regression) or purely time series data. Having panel data permits the study of dynamic relationships and heterogeneity. Development implies change and consequently dynamism, making panel data a good option for statistical analysis to test the hypothesis.

By taking averages over subjects, it is possible to have more reliable statistics and to require fewer time series observations to estimate dynamic patterns.

For repeated observations the basic model is:

$$y_{it} = \alpha_i + x'_{it}\beta_{it} + \varepsilon_{it}$$

The parameters are unknown and consequently the model will be of fixed effects. Then the final version of the model is as follows:

$$y_{it} = \alpha_i + \beta_1 x_{it1} + \beta_2 x_{it2} + \dots + \beta_k x_{itk} + \varepsilon_{it}$$

where:

$t = 1, \dots, T_i$ , number of observations (3 times series, 1990, 1995 and 2000).

$i=1, \dots, n$ , number of Mexican cities (40).

$y_{it}$  = % of people earning more than five times the minimum salary

$\alpha$  is the overall mean

$X'_{it}$  is a K-dimensional vector of explanatory variables

$\varepsilon_{it}$  represents subject-specific dynamic patterns (zero random variables) or standard error.

The dependent variable was selected due to the fact that the per capita GDP is unable to provide information about income structure. Economic development is about improving quality of life and therefore more disposable income is a good measure of



increasing standards of life, provided the inflation rate is below this increase. What is desirable for an economy is to have more people earning high incomes. Therefore, I propose to use the variable *% of people earning more than five times the minimum salary* as a dependent variable in the model.

### 6.2.2 An alternative model

It is expected that the econometric assessment of the variables leads to a reduced model in terms of the variables used in the first step, so that I propose a model that includes all variables in order to provide a mathematical framework. The objective is to give to the possible decisions-makers the opportunity to simulate the impacts of policies in the urban area, or in the case of the private sector decision-makers to assess the opportunity to relocate in other city due to expected better conditions or simply due to better business conditions in general.

This model will be entirely derived and tested with the data for the 72 variables in chapter 8. Possible adjustments to the model will be also included as a part of the whole econometric analysis. The expected result of this process will be a large model able to capture the impacts on the variables and factors, of policies designed by local authorities.

### 6.3 Data

Data are gathered principally from the 1990 and 2000 Mexican census as well as the “Conteo de poblacion y vivienda 1995” (Partial census). Another source will be “Mercametrica de 80 ciudades Mexicanas” (Market measures of 80 Mexican cities) and Reporte Economico Banamex (National Bank of Mexico’s Economic report). Wherever possible, all the variables are collected from the same official sources but some gaps may occur and these are to be filled with information given by city authorities in their websites or by independent sources.

The availability of data to represent the variables was tested previously in a research by Serrano (2000). However, in this case data from the new census was not included at that time. Final results are now ready to be downloaded from the website of INEGI (National Institute for Geography, Statistics and Informatics) which is the official

source of statistical information at national level. In the case of other sources, they use the services of private companies to carry out independent survey.

The data at city level are different from the data at municipal level as it is explained in the methodology of INEGI. The same applies to independent surveys and other sources of data used in this thesis.

**6.4 How many cities and why: the validity and robustness of the sample**

**6.4.1 The number of cities: a justification**

40 cities have been selected in the sample because they account for more than 65% of the total population and more than 70% of the total income disposable. The rest of the cities out of the sample are small in terms of inhabitants for the Mexican standard (less than 50,000 inhabitants) and their total participation in the national economy is reduced.

Another important consideration for the exclusion of some other important cities was that in some cases regions as Veracruz could have more than two cities in the sample biasing the results because in terms of population this is the third largest state. The results would show a tendency toward the economic characteristics of this region.

Finally, the sample was selected taking into account an even geographical distribution of cities within the territory. The following table present the list of the cities included in the sample.

**Table 6.1**  
**Sample of cities**

1. Acapulco	11. Cuernavaca	21. Mexicali	31. Tepic
2. Aguascalientes	12. Culiacan	22. Monterrey	32. Tijuana
3. Campeche	13. Mexico City	23. Morelia	33. Tlaxcala
4. Cancun	14. Durango	24. Oaxaca	34. Toluca
5. Cd. Juarez	15. Guadalajara	25. Pachuca	35. Torreón
6. Cd. Victoria	16. Guanajuato	26. Puebla	36. Tuxtla Gtz
7. Chetumal	17. Hermosillo	27. Queretaro	37. Veracruz
8. Chihuahua	18. La Paz	28. Saltillo	38. Villahermosa
9. Chilpancingo	19. Leon	29. San Luis	39. Xalapa
10. Colima	20. Merida	30. Tampico	40. Zacatecas

### 6.4.2 The characteristics of the cities.

Mexico is a federal country composed by a central government located in Mexico City, which is also the capital of the country. Mexico has 31 regions (estados) and the Federal District, called Mexico City. Each region has an administrative capital and a set of municipalities subject to the regional administration for diverse purposes. There are approximately 2638 municipalities and 364 cities according to recent Mexican census defining a city as any agglomeration of people above 10,000 inhabitants with political and administrative representation. The 50 largest cities concentrate 72% of the total population and 89% of the national GDP. Each city has geographical boundaries within the municipal territory.

In the sample, 31 cities are state capitals and one is the national capital, Mexico City. The others are large and medium size cities with a large political and economic participation in national issues. To reduce the risk of bias towards a particular kind of city or towards a particular industrial sector, coastal location, manufacturing-oriented, service-oriented and financial “cities” are represented keeping the proportion wherever is possible to avoid over representations of a particular economic activity.

Three cities within the sample are considered the megalopolises of the country: Mexico City with a metropolitan population of around 20 million people; Guadalajara with 6 million inhabitants and Monterrey with 3.5 million. Between them 30% of total population of the country is included and more than 35% of the economic activity.

Geographically, thirteen cities are located within a ratio of 500 kilometres or less from Mexico City. All the largest cities are included in the sample with the exception of Coatzacoalcos due to the fact that the same region already has another two cities within the sample.

Politically, there is a mix of political parties administrating the cities and thus there is no tendency to have a bias sample where one or two political parties are in power. The cities are entities with a president who have some “independency” from the central level but lack of autonomy in traditional activities attributed to central governments.



In the case of capital attraction policies, the whole city is represented to investors and not just one council. The benefits are shared between the metropolitan councils according to a set of rules to keep the system fair and to provide the maximum benefits for the local citizens.

### **6.4.3 The sample representation at nation level**

For the purpose of the research, the size of the sample is enough to cover all the main aspects of the economy, political and social life of the modern Mexico. Also all the most important cities are considered due to their significance and influence in national policies and population requirements.

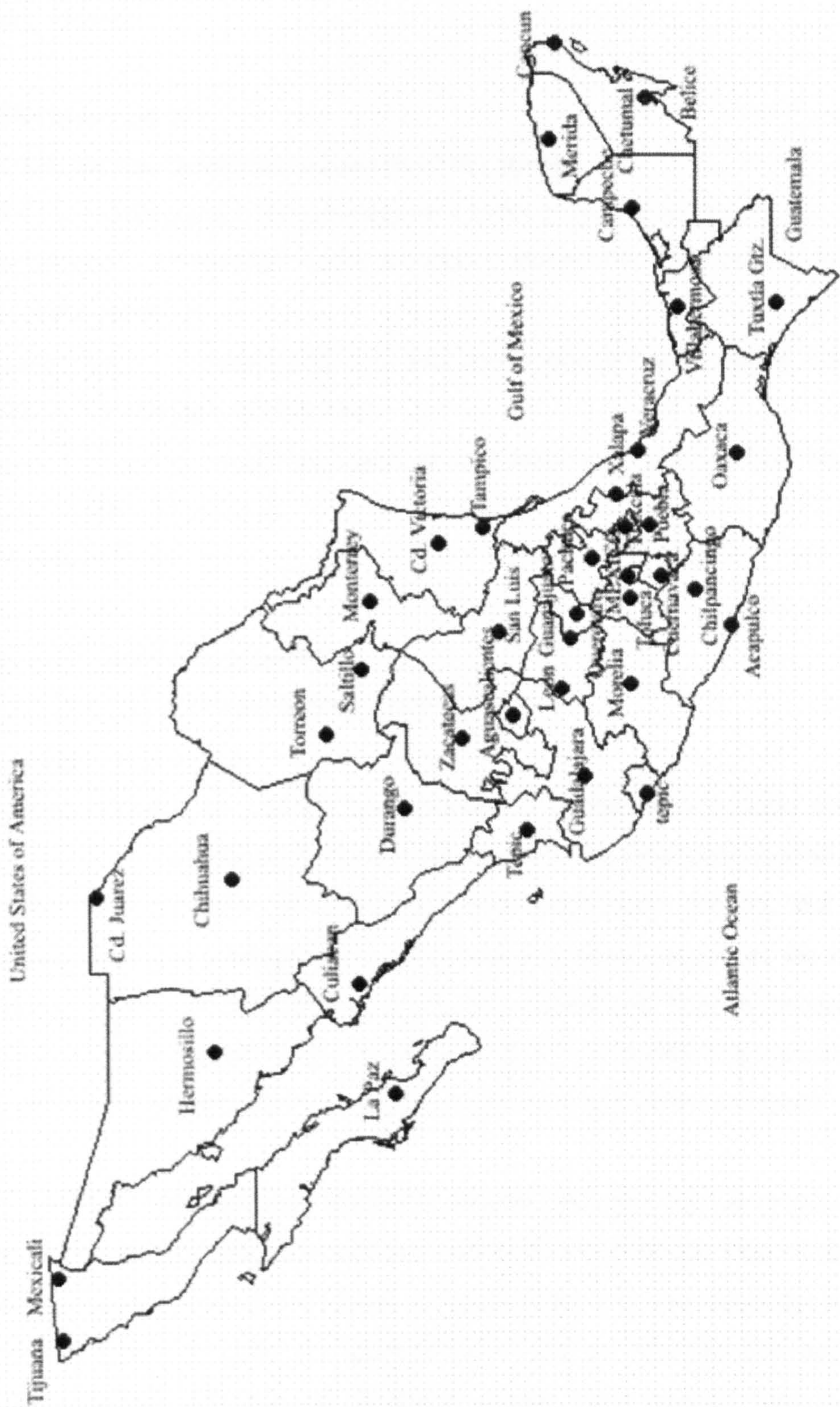
I expect to find statistical evidence of extreme divergences between poor and rich cities as well as the factors statistically significant to simulate policies and to appraise their effects to reduce inequality in terms of the per capita income.

Mexico could be divided into three large regions with extreme economic and cultural differences. While the northern cities seem to enjoy the benefits of international trade with America, the southern ones are characterised by high poverty levels due to their dependence in agricultural products with no value added and low market prices. Central cities are on the national income average, with the exception of Mexico City. They have the advantage of producing for local markets and have the comparative advantage of being located close to the largest city in the country, attractive for mass manufacturing. This diversity is represented in the sample and all the regions are included so as to have all kinds of cities.

Unfortunately the inclusion of more cities could lead to data gaps and to overrepresentation of some regions above others. It is possible to say, and necessary to recognise that the inclusions of the three megalopolises incorporates some disturbance to the data and thus into the intended model. However, it is not possible to represent the Mexican economy without these cities.



Figure 6.1 Mexican cities and their location





This map shows not just the cities included in the sample, but also other important cities of the country, the region they belong to, and the most important roads and railway systems.

## 6.5 The basic model

### 6.5.1 The driving forces encompassed in the model:

$LED = f(\text{attractiveness} + \text{competitiveness} + \text{national performance}) + e$

Attractiveness = (Time=short term decisions) government intervention. Starting off point of the economy.

Competitiveness = (Time=long term decisions) reduced government intervention) sustaining the economy at high level.

National Performance = National policies with nationwide effects. Then its statistical variance is zero at city level.

$e$  = Standard error.

### 6.5.2 The factors and variables

The model consists of nine factors in total:

#### 1. Human resources

Every city, region and country has a number of people with specific abilities and skills. Yet all the population in a place has a literacy and education level which varies from one city to another according to school availability, literacy, and access to education. By human resources is understood the “stock” of people the city has to provide companies to help them carry out their operations. Human resources do not only mean production workers, but also executives and middle management workers who contribute with their effort to undertake all the activities in a company.

The modern knowledge-based economy requires educated human resources able to learn and assimilate processes and new ways of doing things. Due to this, human resources become the central stock of knowledge and consequently those cities wanting to achieve a higher development level based on attracting companies in these industrial sectors will have to import or create these “assets” through effective educational programmes (Lambooy, 2002). It has been claimed that the U.S.A economy has soared in the last ten years thanks to the productivity and competitiveness of its labour force compared with other countries in the world. People



represent the “brain” of any organisation and one of the most expensive resources. Service companies have as primary cost the payroll of their employees.

Poverty and human development are highly correlated (Thirlwall, 1999). Developed countries tend to have high levels of literacy and high level of school attendance while developing countries are the opposite. Traditionally, labour intensive activities tend to locate in developing countries where labour costs are lower than in developed ones.

Although the last paragraph illustrates nation cases, the same set of rules applies at urban level. Cities with higher number of postgraduates will be prone to have more research and development centres than their counterparts. Costs of labour are also determinants in attracting investment and keeping competitive levels. Places with high unemployment rates provide greater availability of labour because more people are free. This availability, by simple rule of supply and demand, pushes the labour salaries and wages down, reducing the companies’ costs. Tight labour markets push salaries and wages up and may not be very good places for the location of companies with labour intensive requirements (Hayter, 1997).

Selected variables:

- Number of union strikes/100,000 workers.
- Number of union conflicts/100,000 workers.
- Index conflicts/Strikes
- Number of elementary schools/population under 12 years old.
- Number of universities and post-graduate institutions/100,000 inhabitants.
- Unemployment rate.
- Total population aged 15 years-old or younger.
- Illiteracy rate.

## 2. Business climate and suppliers

Companies need a large variety of products and services to produce and to provide services, according to the sector. Thus, whatever the size of the company, it is necessary that other companies supply principal or complementary products and services. A city is expected to be more competitive if its network of suppliers is effective and efficient to produce and deliver. Of course the number is also important but not too much determinant to increase competitiveness.

All the companies in the city generate an atmosphere which permeates to all the economic actors. Monopolies, oligopolies and cartels are seen as negative conditions in the business climate. Business-oriented cities and entrepreneurial characteristics make the city more desirable to locate productive investment.

Distance to suppliers is conceived as one condition to select places to invest. It also represents one condition to make cities more competitive in the global market (Hodgkinson et al, 2001) even despite just-in-time systems.

Bennet and Bratton (2000) find that distance to external advisors and general consultants influences the decision of companies' executives to select places both to expand facilities and to locate new ones. This is due to the fact that consultancy services are responsible for business expansion.

Cities must have a reasonable number of providers of these services to become competitive and attractive to new investors and to those already working in there. Although previous research shows that distance is a mayor factor in the selection of business advisors, it is important to mention that this element is decreasing in importance, thanks to better communication systems like Internet and video conferencing which bring about face-to-face contact.

Hayter (1997) points out that medium and large size companies subcontract some of their process mainly from local companies which can offer cost savings to increase productivity and competitiveness in regional and international markets. The impact of such policy in terms of economic development is big due to the increasing opportunity for new start-ups and the consequence of spillovers in job creation, spending power, etc. If a place wants to obtain higher living standards and more and better jobs, in some way or another, local organisations must work together to bring about conditions where small suppliers can have access to contracts with large and medium companies.

To sum up, the behaviour of all the economic actors in a city is called business climate. Market openness and fair trade conditions for the actors will lead to a perfect

business climate. However, protectionism and favouritism will induce market failure, damaging the chances of economic and social success for cities.

Selected variables:

- Number of credit institutions and building societies/10,000 businesses.
- Number of insurance companies/10,000 businesses.
- Units of transport (trucks)/manufacturing companies.
- Freight companies/100 manufacturing companies.
- Bank deposits (M1+M2)/total population.
- Establishments for commerce and general services/10,000 population.
- Establishments of professional and technical services/10,000 population.

### 3. Technological support

Some industrial and service sectors might need special facilities, assistance and a specialised labour force to undertake research and development projects in order to create more and better products and services for their markets. Cities with universities and technology industrial parks are more competitive and attractive because they can provide these services. The so-called knowledge industry is one of the most dynamic sectors growing above the average of other industries.

Companies oriented to global markets prefer to locate facilities and headquarters in those cities with knowledge-generation tradition due to the abundance of skilled people to work (Cantwell and Iammarino, 2000). Universities are not seen just as “producers of skilled labour”, they also have facilities and people who know how to do research and can contribute with ideas to improve the company’s market position.

Cities benefit from productivity gains derived of research and development. Rigby and Essletzbichler, (2000) claim that there is a strong correlation between regional productivity growth and technology-oriented regions. Their argument is regions with companies undertaking technological research tend to be more productive in the overall performance. This can be associated to spillovers not necessarily from the development of new processes, but from the movement of the labour force from one company to another.



Technology support represents a factor affecting both urban competitiveness (economic performance) and urban competition (distinctive capabilities and assets). Urban competitiveness increases as consequence of technology because the city receives the profits in terms of more spending in the local market, more people living in the area and paying local taxes, and in general people become wealthier as a result of higher productivity.

On the other hand, urban competition is also affected but in other way. Cities able to provide incentives for research and development or with facilities to support this activity are positioning themselves more favourably because only a few cities are capable of offering the same advantages for the companies they host.

In conclusion, technology affects directly the city economic performance. Bovaird (2000) contends that the development of technology is first assimilated by people and companies in the local market and second by regions and countries.

#### Selected variables:

- Registered private expenditure in R&D, in Mexican pesos/Total population.
- Registered public expenditure in R&D, in Mexican pesos/Total population.
- Total expenditure in R&D (gross expenditure)/Total population.
- Number of internet connections (including households and companies)/1,000,000 population.
- Post-graduate students/100,000 population.
- Number of research and development centers/100,000 population.

#### 4. Urban economic conditions

Undoubtedly, cities have inherent economic conditions that shape costs and prices of the exchanges amongst the inhabitants, firms and government. Spatial issues are in part, responsible for divergences due to distance to production and delivery centres, the role of the city in the national and regional hierarchy, the city dimension and so on.

Urban economic conditions are indicators of the urban economy's wealth and are represented traditionally by local inflation rate, growth of the economy, labour market structure and inward investment growth (Temple, 1994). The variables representing this factor tend to be used in traditional economic development models as dependant

variables due to their capacity to capture large standard deviation and variance percentages.

The value added in the different economic sectors (primary, secondary and tertiary) explains the economic functioning in terms of productivity and the consequent differences between rich and poor cities. Besides, city capitals (national or regional ones) tend to have specialised sectors not available in other cities, giving them by definition comparative advantages and become, in many cases, attractive poles for companies (Lever, 1999).

The size of the economy is another important element for analysis to evaluate the urban economy and as a matter of fact, it has received a lot of attention in the field of economic geography recently. Concepts such as agglomeration economies, localised externalities and regional and urban scale economies are now being studied with attention because they are now considered the sources of urban economic growth (Boddy, 1998).

Despite the political and economic debate whether or not the urban economy factor can be influenced by local or even national governments, for the purpose of this research it is assumed that governments at local level have no direct influence in macroeconomic policies.

It has to be noticed that economic conditions influence market conditions but they are not the same. While market conditions deal with prices, products and quantities in terms of exchange, the economic conditions determine the basic conditions for negotiations, such as interest rates, periods for paybacks, to name but a few. In the case of the local economy factor, expectations play an important role to establish buying conditions (Blair, 1995).

#### Selected variables:

- Total public investment in Mexican pesos/Total population.
- Urban inflation rate in the city.
- Value added manufacturing companies, average per unit.
- Value added service companies, average per unit.
- Number of commercial units/100,000 population.

- Total revenue in the manufacturing sector: average per unit.
- Total revenue in the service sector: average per unit.
- Total revenue in the commerce sector, average per unit.
- Economic dependence factor (employed population/total population).
- Capital accumulation manufacturing sector/100,000 manufacturing units.
- Capital accumulation service sector/100,000 service units.
- GDP per capita.

### 5. Physical infrastructure

Three basic forms of physical infrastructure have been identified in the academic literature: a) access to markets such as motorways, roads, rails, and ports; b) industry and services facilities such as warehouses, office premises, and storage units; c) support infrastructure such as industrial parks, access to industrial sewerage, water treatment and recycling plants, to name but a few.

The first form is entirely on the hands of governments, local or national and it is provided not just for the use of companies but also for the inhabitants. It is supported by direct taxation of citizens and companies and in some specific cases, it can be managed by private companies as in the case of some Mexican and American motorways. Two important conditions for the success of cities are good quality and availability. Motorways notably reduce transportation times in comparison with single roads.

The second form is almost completely provided and built by the private sector. Once again quality and availability are two important conditions if cities want to attract and retain companies to induce growth and development. However, the location of these premises in the urban area determines whether or not companies will be willing to locate in them. There are two different perspectives about this fact. Firstly, in the U.S.A. companies prefer to locate their offices in the suburbs rather in the inner cities due to parking and crime problems. Secondly, the opposite is in most of the European countries, where the inner city is being renewed and offers good public transport accessibility, adequate premises, although in some cities at very expensive price.

The third form is a combination of private and public sector facilities even though the trend is moving towards higher private sector participation. Due to tight



environmental rules, manufacturing companies need to recycle and treat water waste to comply with standards.

According to Hodgkinson et al (2001), infrastructure factors such as transport, communications network and availability of facilities to warehouse products are important factors to locate companies. Companies need to be networked to have more efficiency to deliver their products and more reliability to receive raw material, to accomplish this objective, road and motorways must exist as a pre-requisite and must be in good conditions if any company is to be located.

Infrastructure is associated directly with economic development patterns. The hypothesis that infrastructure reduces income disparities is supported by the research of Cutanda and Paricio (1994). Even though this factor is traditionally related to competitiveness, it has been studied a lot as source of economic development (Aaron, 1990; Bartik, 1991; Berndt and Hanson, 1992; Munnell, 1990; Munnell, 1992) not just for developing countries but also for developed ones where rather than the quantity, its productivity is studied (Haughwout, 1998).

Woodward and Rolfe (1992) provide evidence about the importance of the quality of the infrastructure in the location of multinational companies in Latin American countries and the Caribbean basin. Executives in charge of making the locational decision of new facilities prefer places with better infrastructure and even when some countries might offer lower operation costs and high economic incentives, the problem of moving raw materials and finished product in bad roads is bigger and it is not offset. At the same time, the authors argue that more than 30% of new facilities in Latin America aim at "foreign markets", either within the country or to other countries in the world.

Chandra and Thompson (2000) contend that public infrastructure affect economic activity in cities and towns. The construction of highways has differential impacts across industries as well. Some companies will be benefited from lower transport costs due to lower insurance prices and time savings. On the other hand, some companies will lose due to the relocation of economic activity, mainly those companies wanting to take advantage of the greater accessibility.

Another impact of roads and motorways is the reshape of the spatial distribution of economic activity. They increase the level of the economy in the cities were passes through. Nevertheless, the evidence suggests that this grow is due to the loss of other places.

Selected variables:

- Number of construction companies.
- Total supply of electricity, average per company. Includes only service, commerce and manufacturing sectors.
- Total railways systems/10,000 manufacturing companies.
- Industrial land, total occupied area in km<sup>2</sup>.
- Km of roads and motorways/Total population.
- Water supply: average disposable volume per day in cubic meters.
- Distance to the United States of America border or to American Territory.

## 6. Quality of life

There is an increasing interest in the search for those attributes to make the city a more “liveable place”. Quality of life represents the main attributes required to provide inhabitants with elements to enjoy their cities in terms of less pollution, better transport systems, better local government service provision, amenities, recreation centres, better housing, amongst others.

The main question to be tackled is what is meant by quality of life? Sagedy (1997) argues that “quality” hinges upon the combination of price and availability of the desired resources. Thus, quality of life represents a desired standard of the living conditions for any given population according to concepts like housing, health provision, education and leisure facilities. It must be pointed out that this definition varies across countries because each government has its own way to solve the main needs of its population (Sagedy, 1997; Rich, 1997). An example of this disparity is provided by Serrano (2000) who says that “...a city in a developed country should consider how to improve the local health system, while a city in developing country should consider how to provide health facilities” (p.22). Despite the different approaches to the health issue, there is no discussion that sanitary conditions are relevant for enhancing the quality of life.

The causal connection between quality of life and local economic development is still under research by academics (Wong, 2001). However, it can be claimed that local governments are promoting their cities as places with “great quality of life”. As a promotion tool, quality of life means availability of green areas, recreation and sport facilities, amenities and culture (Philo and Kearns, 1993). Heavy traffic congestion, rising levels of pollution and expensive house prices are on the negative side of the quality of life concept.

Wong (2001) finds evidence linking quality of life to local economic development once the traditional locational factors are resolved. This implies that quality of life is a secondary factor to generate economic development, since companies first want to accomplish the traditional minimising-maximising exercise and place everything else second. However, good quality of life is associated with higher investment retention.

Another issue granting more importance to quality of life is the fact that in Europe as well as in other trade blocks, land, labour and capital are now available almost at the same rates in every country, the only thing remaining to offer is the quality of life in the cities (Segedy, 1997).

Quality of life represents a good example of an attractiveness factor, where the local government has a direct intervention in its performance at both the short and long term.

#### Selected variables:

- Average number of people per household.
- Number of hospital beds/10,000 inhabitants.
- Percentage of households without potable water supply.
- Percentage of households without electricity.
- Percentage of households without sewerage.
- Percentage of households without cement floor.
- Death rate.
- Public libraries/100,000 inhabitants, 1995.
- Delinquency level; homicides/offences by 10,000 inhabitants.
- Number of environmental complaints/1,000 manufacturing companies.
- Number of doctors in the NHS/10,000 inhabitants.
- Ratio Homicides/offences.
- Crime rate.



### 7. Promotion activities and city image

The image of a location is a variable analysed by companies when they are looking for a city to locate, not only production facilities or warehouses but also headquarters and other kinds of offices for operations (Hodgkinson et al, 2001).

It can be seen that the new trend is to promote the concentration of economic activity rather than any other factors, in the notion that this encourages more investment and promotion efforts are more agglomerated in one simple target: firms completing the current cluster in the region or the city.

Breschi (2000) sustains that much of the revived attention to economic geography rests on "...the essential importance of knowledge externalities and 'spatially bounded' increasing returns in promoting the spatial concentration of economic activities and growth" (p.213). Recently, promotion efforts either from local authorities or other non-government bodies tend to emphasised clusters and other groupings in the cities. Breschi points out clearly the rationale behind this strategy: the advertisement of scale and agglomeration economies, supposedly to increase savings.

Cities and their media images are another issue concerning and influencing investment decisions amongst investors (Avraham, 2000). "People construct place images and cognitive maps according to the kind of information they receive from various sources" (Avraham, 2000, pp. 364). Despite the efforts of local governments to promote their places as "the best city for..." it is necessary to take into account the media content to create a congruent communication strategy to pull in investment.

Philo and Kearns (1993) also support the argument of marketing the city according to the capacities already existing in the city and not in future possible events. They contend that "promises" not fulfilled (new roads, more schools, more hospitals) reduce the chances of cities to be considered as a locational place due to a bad conception about the government.

What factors promote and how become very important questions in local government's decision-making process. Due to the fact that budget are limited, there

is a need to reduce the scope of the promotion strategy. Albeit some governments prefer to advertise their cities as places with “all what you need is here”, the general approach to the selection of the communication strategy is to promote two or three specific factors where the “promoters” perceive an advantage over other cities (Clark, 2000).

Cities with access to ports, airports, large cities or other geographical advantages will use these as their anchor in the “fight” for attracting investment. Yet the sectors have to be categorised to focus the promotion efforts. Some industrial and service sectors will be more beneficial for the city than others due to comparative and competitive advantages. Indeed, the combination of factors to be promoted in a specific market should lead to a successful campaign where the city would create more opportunities for its population.

Selected variables:

- Total expenditure in city promotion/population, Mexican pesos per capita.
- Total international flights/100,000 international tourists.
- Total national flights/100,000 national tourists.
- International tourists/100,000 population
- National tourists/100,000 population
- Number of hotel rooms (5 stars)/10,000 tourists.

### 8. Urban market

From a business point of view, the urban market factor reflects the number of potential buyers and the likely prices at which the goods and services can be sold. The market, understood as the place where buyers and sellers get together to exchange goods and services for money, is applicable to the city.

Cities exist because individuals are not self-sufficient and because there is a need for social contact and information exchange. “Comparative advantage makes trade between regions advantageous and interregional trade causes the development of market cities” (O’Sullivan, 1993; p. 17).

O’Sullivan also points out that due to the definition of “city” as a place with a high population density, “the combination of comparative advantage and scale economies

in transportation causes the development of a market city” (p.20). How big the market is depends on the level of economic activity and on the convergence of the market forces to establish equilibrium between supply and demand (DePasquale and Wheaton, 1996).

So far, markets are still the most important factor to create new companies and to expand those already working there. Generally, the whole population of a city is the market size, but not for all products and companies. Philo and Kearns (1993) argue that big cities with large populations represent very attractive markets for those companies depending on mass production to be profitable like in the case of retailers, supermarkets, restaurants, and malls.

Within the city, differentiated markets coexist and at the same time, create more opportunities for other competitors either from the same urban area or from outside. Cities are affected by local and external competition and also by external forces derived from the country level. It is a fact that this competition affects prices and consequently each city within the same country may have different inflation and employment rates, influencing consumption patterns.

Yet, consumption hinges upon salaries and wages of the labour force defined as the purchase power of the market. The products and quantities purchased are highly explained by this variable.

Free local markets with no government intervention are more likely to be successful when implementing economic development strategies. More companies will be willing to compete in markets where fair conditions are given for trade, bringing prices down or enhancing attributes of products and services favouring the consumer. The final outcome is more market efficiency due to less prices distortion.

Selected variables:

- Total population.
- Total employed population.
- Total remuneration in the service sector in Mexican pesos, average per unit.
- Total remuneration in the commerce sector in Mexican pesos, average per unit.



- Total remuneration in the manufacturing sector in Mexican pesos, average per unit.
- Population growth rate, 1980-1990, 1990-1995, 1995-2000.
- % of population earning more than 5 times the minimum salary.
- % of population earning less than 1 minimum salary.
- % of population earning up to 2 minimum salaries.

### 9. Government

Local governments are active participants in the urban economy through different means, in some cases as a regulatory entity and in some others as an economic fuelling mechanism. In the former, they impose restrictions on investors (by limiting quantities), which affect the business plan and the competitive strategy (Begg, 2002). In the latter, they act as promoters of the place removing barriers to any kind of operations.

Del Monte and Scalera (2001) argue that local governments are extremely important in helping new companies achieve success due to the creation of mechanisms aimed at reducing the steps required to obtain all the permits and grants to start operation. Places with governments willing to provide support to businesses will be more attractive and more prone to receive direct investment.

Setting and collecting taxes are still the traditional activities for local governments. Yet the provision of education and social services are responsibility of those administering the city (Begg, 2002). However, this not a general rule since each country has its own legislation about the extent of the local government's power.

Another well identified and expected responsibility of local governments is the provision of security against crime and vandalism (McClain, 2001). Some companies allocate safety as the most important factor to select a city and when they obtain it, tax exemptions take second or last place.

Selected variables:

- Local government total revenue/population, taxes per capita collected.
- Local government total social expenditure public works/population.
- Local Government investment in housing, per capita.
- Housing built by local government/total population in D strata (lowest income).

## 6.6 Concluding comments

The aim of the chapter has been to present and discuss the optimum methodology for analysing the proposal that urban economic development can be conceptualised by two driving forces, competitiveness and attractiveness. I argue that the best way to check for economic asymmetries among cities is by comparing the cities' economic performance in terms of their competitiveness and attractiveness factors and variables.

The traditional sections of any methodology are included hereby like justifying the statistical method, basic assumptions, the hypotheses and research questions. I conclude the chapter presenting and providing theoretical evidence of the possible relationship between the factors and urban economic development.

The search for pragmatic research begins with putting complexity aside to incorporate representation, realism and understanding without leaving aside the formality of any analysis and the search for optimum solutions without compromising the truth. Complex economic models do not provide real answers to modern urban economic problems since a great number of them are created either to model data on the phenomenon or to satisfy researchers' egos (Hausman, 2000).

In this way, the intention is, rather than being immerse in the complexity of the mathematical formulation, to propose a new approach to the economic development and lack of growth problems, by using competitiveness and attractiveness variables in order to incorporate the practical aspects of new knowledge.

The following two chapters present the empirical analysis and provide the answers to the formulations stated in chapters 5 and 6, starting with an economic comparison to determine whether or not competitiveness and attractiveness factors are able to capture any possible economic discrepancy in the selected sample of cities.

# Chapter 7

## Empirical evidence of uneven economic development in the Mexican context

### 7.1 Preliminary comments

The uneven distribution of economic resources, business opportunities and population in Mexico, has become the main concern for central and urban governments in the last 10 years. Recently, state and city authorities have pointed out the need for economic strategies at micro level to induce economic growth firstly and then development. The new government of Vicente Fox, the new opposition's president gave the municipalities and state governments more independence to create urban and regional policies aiming at attracting investment of any kind in order to solve traditional problems such as unemployment, low wages and salaries, lack of infrastructure, education, amongst others.

Although the last two years have provided some advances in improving social security and in consolidating the "young democracy", it has not been easy to readdress the economic trends arising from previous national governments to tackle poverty and social exclusion. Thereby, the economic growth trends of the last 10 years are not reflected in a better economic development level. Some regions have obtained notable gains and some others have not. Derived from the North American Free Trade Agreement (NAFTA) for example, the border cities and thus the regions have seen their average quality of life enhanced, their wages and salaries increased and unemployment rates diminishing to below 2%. Unfortunately this happy story is by any means the reality for all Mexican cities.

Mexican cities seem to be characterised by economic differences depending on their geographical location. The Northern region, dominated by states sharing a border with the United States of America, has better indicators like a higher per capita income, more political participation and almost no illiteracy, while the Southern region has the



lowest per capita income and the highest illiteracy level. One important question arising from this fact is: what factors could be tackled to reduce the gap without affecting the economic growth trend of the rich cities?

In spite of recent attempts to create local strategies for a more adequate distribution of resources, the central government insists on economic development policies at national level without taking into account the gaps amongst different regions. Such policies seem to benefit those places with a very well established industry and large population, while medium or small cities seem to obtain marginal benefit if any.

In the first part of this chapter I attempt to prove the hypothesis 1 of this research: “There are no economic differences between cities”. The implication of this hypothesis relies on the distribution of resources to induce economic growth and development. The research question is “are all the cities in the sample having the same opportunities for achieving economic development?”

In chapter 8, I portray the economic development function as a set of urban competitiveness and attractiveness variables. The research question is as follows, “what are the factors and variables framing the concept of economic development?” This is answered under the assumption that creating an econometric model with a set of factors and variables proposed at theoretical level would lead to a new empirical approach of economic development where the concepts of competitiveness and attractiveness are at the core.

## **7.2 Findings: uneven development in Mexican cities**

The current section deals with the presentation of empirical evidence about the set of factors and variables associated to competitiveness and attractiveness at urban level, to identify and assess the possible uneven distribution of resources and opportunities in the cities selected. However, not all the nine factors studied in previous chapters will be presented and evaluated due to the following assumptions.

Firstly, the factor “business climate and suppliers” and therefore its variables can be taken as *outsiders* to the city since it is not possible to account how much local suppliers

contribute to the local economy. The interregional and international trade adds complexity to the individual analysis of variables which is the case of this section, but this “disturbance” can be reduced when a pool of variables are cointegrated or associated with others.

Secondly, the factors “urban market” and “urban economic conditions” are put together to provide a broader framework of analysis taking advantage of the high interaction and overlapping in few cases between both factors. What is more, taking both factors at the same time for analysis provides a unique opportunity to study the information and data with more chances to find strong correlations and to make the analysis more robust.

Thirdly, variables linked to the factor “technological support” were integrated into the factor “human capital” to extend the analysis in order to correlate the abilities and skills of human resources with the application of science and technology to manufacturing activities and other processes associated to the generation of knowledge.

Finally, the factor “urban promotion and city image” is not included in order to avoid repetition of results. Since urban promotion depends mainly on government efforts and the perception of the public, it becomes difficult to assess any possible discrepancies objectively among cities. The variables selected for the modelling process again are in economic terms (expenditure, economic incentives, etc) and contribute to the analysis when they are taken in conjunction with other variables.

### **Economic conditions**

Traditionally, the GDP per head has been the classical indicator for economic development. What is more, recent literature in urban economics refers to it as the best possible way to measure economic performance when it is used within a country’s economies or large regions. In the case of Mexico, the GDP per head shows the differences between cities, as it is stated in the next table.

**Table 7.1**  
**GDP per head for Mexican cities**

Place	City	GDP per capita, 2000 (constant pesos, 1993)	Population 2000
1	Cancun	\$ 101,407	404,589
2	Monterrey	\$ 92,183	3,213,388
3	Mexico City	\$ 86,009	15,491,973
4	Chihuahua	\$ 85,555	721,760
5	Cd Juarez	\$ 76,419	1,159,780
6	Saltillo	\$ 74,860	669,358
7	Queretaro	\$ 73,889	651,283
8	Tijuana	\$ 72,473	1,134,772
9	Hermosillo	\$ 71,659	643,276
10	Aguascalientes	\$ 68,580	678,189
11	La Paz	\$ 67,968	193,459
12	Mexicali	\$ 67,838	763,168
13	Torreon	\$ 67,825	1,015,402
14	Campeche	\$ 67,599	222,064
15	Cd Victoria	\$ 66,579	278,538
16	Tuxtla Gutierrez	\$ 57,217	485,158
17	Guadalajara	\$ 57,195	3,613,283
18	Puebla	\$ 56,297	1,372,667
19	San Luis Potosi	\$ 56,060	912,831
20	Chilpancingo	\$ 55,881	203,985
21	Pachuca	\$ 55,729	255,608
22	Veracruz	\$ 54,520	592,445
23	Tampico	\$ 54,403	460,588
24	Colima	\$ 53,841	125,934
25	Cuernavaca	\$ 51,907	331,170
26	Durango	\$ 51,529	516,626
27	Merida	\$ 50,690	714,972
28	Villahermosa	\$ 47,651	532,021
29	Acapulco	\$ 47,551	776,709
30	Zacatecas	\$ 47,036	134,958
31	Oaxaca	\$ 45,818	289,940
32	Morelia	\$ 44,953	681,425
33	Guanajuato	\$ 44,579	140,780
34	Culiacan	\$ 44,315	757,858
35	Leon	\$ 43,072	1,203,582
36	Tepic	\$ 41,670	344,944
37	Toluca	\$ 40,589	2,563,144
38	Xalapa	\$ 39,672	427,209
39	Chetumal	\$ 36,846	203,943
40	Tlaxcala	\$ 29,946	76,182

Source: Banamex, 2002.

Table 7.1 provides a clear picture about the differences in terms of the GDP for the sample of cities. The cities of Cancun and Monterrey have a GDP per head three times higher than the one of Tlaxcala. Also relevant is how city size plays an important role in the ranking, since the biggest cities in terms of population are almost



at the very top with the exception of Toluca, which is positioned 37<sup>th</sup> and with a population of more than half a million inhabitants.

Except Cancun, the first ten places are cities with a large manufacturing tradition and are part of the so-called industrial corridor Mexico-Canada, which flourished after the sign of the NAFTA. All the border cities are amongst the first 15 places, providing evidence of the USA linkage effect on the Mexican economy, as it has been documented elsewhere.

**Figure 7.1**  
**Cities in the “industrial corridor”**



The last ten cities in the ranking, not including Toluca, are capitals of their regions and their tradition is based mainly in government activities and local trade. Although the last four are capitals, their state or region has more important cities in terms of population and economic activity like Cancun (same state as Chetumal), Veracruz (same state as Xalapa) or Apizaco (same state as Tlaxcala).



One relevant finding, opposite to expected results is related to the geographical position of the last cities ranked in the table. Usually, the Southern part of the country is the “poor” area, while the Central part is wealthy. The results seem to contradict this trend, eight of the last ten cities are located in the periphery of Mexico City, no more than 400 km away and very well linked by all transportation means to it.

The migration process to Mexico City has not only absorbed people but also business opportunities from these cities. Besides, being that Mexico City is a very large market represents as well a lower risk for business dependants on mass production.

A possible conclusion about this finding is that cities in the Southern part of Mexico are not as “poor” as they are usually considered, what it seems to happen is that the state is poor and some cities are performing economically well above the state average. Medium size cities close to Mexico City suffer for the attraction forces exerted by the national capital and its inherent monopolistic activities such as government, cultural activities, corporate offices, and so on.

Twenty two cities are above the GDP per head of their respective state. This means that in half the cases one city contributes largely to total production of the state. Extreme cases of cities with centralised economic activity are Cancun, Puebla, San Luis Potosi and Chilpancingo. This supports the hypothesis that even within states there is an uneven distribution of economic activities and thereby development.

**Table 7.2**  
**GDP per head in Mexican cities**  
**(constant pesos, 1993)**

Place	City	City	State
1	Cancun	\$101,407	\$85,277
2	Monterrey	\$92,183	\$96,075
3	Mexico city	\$86,009	\$148,053
4	Chihuahua	\$85,555	\$87,080
5	Cd Juarez	\$76,419	\$87,080
6	Saltillo	\$74,860	\$75,800
7	Queretaro	\$73,889	\$71,128
8	Tijuana	\$72,473	\$69,401
9	Hermosillo	\$71,659	\$74,992
10	Aguascalientes	\$68,580	\$67,886
11	La Paz	\$67,968	\$67,026
12	Mexicali	\$67,838	\$69,401
13	Torreon	\$67,825	\$75,800
14	Campeche	\$67,599	\$86,003
15	Cd Victoria	\$66,579	\$67,463
16	Tuxtla Gutierrez	\$57,217	\$24,889
17	Guadalajara	\$57,195	\$61,148
18	Puebla	\$56,297	\$36,689
19	San Luis Potosi	\$56,060	\$46,124
20	Chilpancingo	\$55,881	\$29,722
21	Pachuca	\$55,729	\$36,060
22	Veracruz	\$54,520	\$34,909
23	Tampico	\$54,403	\$67,463
24	Colima	\$53,841	\$58,960
25	Cuernavaca	\$51,907	\$49,307
26	Durango	\$51,529	\$52,961
27	Merida	\$50,690	\$46,164
28	Villahermosa	\$47,651	\$35,136
29	Acapulco	\$47,551	\$29,722
30	Zacatecas	\$47,036	\$34,155
31	Oaxaca	\$45,818	\$26,580
32	Morelia	\$44,953	\$35,337
33	Guanajuato	\$44,579	\$41,538
34	Culiacan	\$44,315	\$44,082
35	Leon	\$43,072	\$41,538
36	Tepic	\$41,670	\$35,871
37	Toluca	\$40,589	\$45,283
38	Xalapa	\$39,672	\$34,909
39	Chetumal	\$36,846	\$85,277
40	Tlaxcala	\$29,946	\$31,290

Source: Banamex, 2002.

Indeed, eleven cities are below the average GDP per head of the state, even when they are state capitals. However, this is not something negative because it could be interpreted as a fair distribution of economic activities with the state-region; some



places are dedicated to government activities and some others to manufacturing and industrial activities. Nonetheless, it is negative to have such big differences in terms of the GDP because it might induce migration to the places where salaries are higher, consequently producing new unbalances in the population distribution. For example, the city of Chetumal and the city of Cancun are located in the same state but their GDP difference is vast, while the first is \$101,407, the second is \$36,846, almost 2.8 times higher in spite of having the same economic region and social policies. This unequal distribution of economic resources points out towards a concentration of productive capital in few cities leading to an economic development problem.

As it is shown in table 7.3, some Mexican cities have benefited more from national and local policies and strategies than others have.

The period between 1997 and 2001 has been selected for two reasons. It represents the last two years of the President Ernesto Zedillo, and the first two years of President Vicente Fox. It can be appreciated in the ranking that the common denominator is the change in the first positions. Although Cancun, Monterrey and Mexico City remain more or less within the same parameters, cities like Villahermosa, Cuernavaca, Pachuca and Toluca fell drastically to the middle or bottom positions and gave away their positions to cities located in the border states. This is not a random event or the product of a coincidence. President Fox is a hardened advocate of a trade integration with the USA, and the ranking seems to confirm that the strategy is working very well although some cities are losing out.

Economic growth of 100% (current pesos) or above in the period were achieved by the following cities: Chihuahua, Tijuana, Ciudad Juarez, La Paz, Mexicali, Tampico, Durango and Ciudad Victoria. The common characteristic to all these cities is their economic base: manufacturing. Yet, mostly all of them are located on the border with USA and are considered the maquiladora cities (assembly factories).

**Table 7.3**  
**GDP per capita growth, (constant pesos)**  
**Ranking**

	Place 1997	Place 2001	1997-2001 Growth (%)
Cancun	1	1	-5.21
Campeche	2	14	1.37
Monterrey	3	2	63.43
Veracruz	4	22	-1.18
Mexico city	5	3	57.29
Cuernavaca	6	25	-2.82
Villahermosa	7	28	-9.43
Pachuca	8	21	13.93
Queretaro	9	7	62.71
Toluca	10	37	-7.28
Saltillo	11	6	71.79
Hermosillo	12	9	64.63
Tlaxcala	13	40	-30.79
Merida	14	27	24.96
San Luis Potosi	15	19	38.64
Leon	16	35	7.86
Puebla	17	18	42.50
Oaxaca	18	31	16.93
Acapulco	19	29	21.71
Torreon	20	13	75.46
Chihuahua	21	4	122.58
Chilpancingo	22	20	47.24
Guadalajara	23	17	57.92
Tijuana	24	8	102.35
Tepic	25	36	17.86
Aguascalientes	26	10	96.94
Colima	27	24	57.41
Cd Juarez	28	5	127.40
Tuxtla Gutierrez	29	16	73.59
Zacatecas	30	30	50.33
Culiacan	31	34	46.02
La Paz	32	11	128.98
Mexicali	33	12	139.32
Morelia	34	32	65.12
Tampico	35	23	115.57
Durango	36	26	110.82
Guanajuato	37	33	88.10
Xalapa	38	38	69.73
Chetumal	39	39	72.53
Cd Victoria	40	15	226.51

Source: Banamex, 2002.

Another important fact is their geographical location. These places appear as beneficiaries of the national policies aiming at exporting and integrating the economic activity to that of our trade partners in the North, rather than from local or regional

policies. Aguascalientes, Guanajuato and Tuxtla Gutierrez had a high growth level as well, even considering their not advantageous geographical position, mainly far away from any important market. The case of Tuxtla Gutierrez deserves some comments. The city is the capital of Chiapas, so far the most difficult region in Mexico due to the guerrilla movement. The guerrilla its leader, the subcomandante Marcos, has exerted political and military stress over the government in order to attract his attention so that the indigenous' problems can be tackled and solved. In 1996 and 1997 the central government registered a record investment in the state. Motorways and social housing took the greatest share of the funds. In this way, such a growth can be explained.

At the bottom part of the table three cities notably improved their position (La Paz, Mexicali and Ciudad Victoria) due to their spectacular growth in the period moving up at least 20 positions. The growth of these cities is explained by the construction of infrastructure over the period.

The middle of the table presents interesting information about the dynamics of the cities. From places number 20 to 30, 8 of them improved their position with respect to 1997, one remains in the same and only one (Tepic) was worse off.

It could be inferred that the fight for resources of any kind is at the middle of the ranking, where any growth above the average is instantly reflected in the city's position, while the first and least parts of the table do not show any significant change over time. In relation to urban and national policies, these extremes should receive special attention.

Another important factor for economic development is the composition of earnings in the urban areas. To start the development process it is necessary to create the conditions to increase salaries and wages without generating any inflationary process.

Wages and salaries are also sources of unevenness in the Mexican economic system. Table 7.4 shows the average annual earnings for 2001, where once again the cities located in the border states with U.S.A. perform above the average (\$37,348). It is important to mention that in this case the disparity between the first place and the last is not as critical as in the case of the GDP per capita.



**Table 7.4**  
**Average annual earnings, 2001**

Place	City	Earnings	Place	City	Earnings
1	Tijuana	\$48,841	21	Guadalajara	\$36,819
2	Mexicali	\$47,602	22	Zacatecas	\$36,523
3	Saltillo	\$44,292	23	San Luis Potosi	\$36,223
4	Chihuahua	\$44,029	24	Guanajuato	\$36,192
5	Cancun	\$41,988	25	Tampico	\$36,045
6	Monterrey	\$41,672	26	Colima	\$35,847
7	Chilpancingo	\$41,048	27	Cuernavaca	\$35,680
8	Hermosillo	\$40,804	28	Puebla	\$35,256
9	Torreon	\$40,783	29	Mexico City	\$35,246
10	Queretaro	\$40,702	30	Veracruz	\$35,012
11	Villahermosa	\$39,943	31	Tepic	\$34,973
12	La Paz	\$39,883	32	Durango	\$34,972
13	Leon	\$39,644	33	Oaxaca	\$34,393
14	Cd Juarez	\$38,790	34	Chetumal	\$31,683
15	Pachuca	\$38,231	35	Tuxtla Gutierrez	\$31,507
16	Aguascalientes	\$38,208	36	Merida	\$31,251
17	Culiacan	\$37,804	37	Xalapa	\$30,278
18	Toluca	\$37,645	38	Acapulco	\$30,186
19	Cd Victoria	\$37,417	39	Tlaxcala	\$29,766
20	Morelia	\$37,117	40	Campeche	\$29,616
				<b>Average</b>	<b>\$37,348</b>

Source: Banamex, 2002.

The last ten places are occupied mainly by cities located in the Southern part of Mexico, as it could be expected. Nonetheless, places with a high GDP per capita are at the bottom of the table like Campeche, Acapulco or Mexico City. This fact can be approached from two perspectives. The first one deals with the notion of cheap labour leading to more production to export to other regions. Since cheap labour becomes attractive for mass production such places are totally adequate for this kind of companies. The second approach deals with labour availability, which seems to reflect more closely the reality of these cities. Cities like Tepic, Durango, Chetumal Tuxtla Gutierrez, Xalapa, Tlaxcala and Campeche, do not have a diversity of economic activities but only one: government.

The lack of other sources of employment has induced low salaries and wages since there is an oligopoly in terms of buying labour. Besides, the public sector in Mexico has been traditionally a “low payer” but a source of permanent employment. For some workers and their unions, the trade-off looks fair.

The two perspectives presented in the last two paragraphs represent into some extent, the reality for cities located in different regions. For example in the first two cities, Tijuana and Mexicali, traditionally “exporters” of workers (wetbacks) to USA face indirectly the competition problem from cities like San Diego and Los Angeles. Workers prefer to risk their lives crossing the border illegally seeking higher wages and the American dream. Thus, companies carrying out operations in Mexican territory are forced to pay incentives on top of salaries to avoid rotation.

The next table presents the distribution of low earners as a percentage of the total occupied population in terms of minimum salaries (MS) [1MS=\$4.5 USD dollars per day]. The table covers two years, 1990 and 2000 so that an interval of ten years can be analysed as a progression to search for changes.

The 1990s brought about good results for most of the Mexican cities. From the sample all cities but one (Cancun) saw a decrease in their low-income population (defined as those earning up to 2 MS). With exception of the years 1995 and some part of 1996 when the economic crisis stroke the country deeply, the other years meant positive growth and development in terms of better incomes for large portions of the population

It is not a surprise to find at the top of the table cities like Xalapa and Campeche or Acapulco with a large percentage of people earning less than the minimum salary. Sub-employment, in the form of street sellers, household cleaners, gardeners, amongst others, is common due to the lack of formal employment sources. It has to be said that to pay below the minimum salary<sup>1</sup> (3.5 USD dollars per day) is against the law. The Southern part of the country has been traditionally a cheap area in terms of labour and living costs. The lack of jobs in the area and a depressed and underfunded agricultural sector led to a declining economy in most of these cities. Unfortunately, it has also lagged behind the rest of the country due to its high illiteracy levels, lack of good universities, poor infrastructure and a harsh geography leading to difficulties to transport raw materials and final products to cities in the mountain area.

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<sup>1</sup> Minimum salary: is the minimum amount of money per day payable to Mexican workers per day.

**Table 7.5**  
**Percentage of low-income earners 1990 and 2000**  
**Population earnings**

	< 1 MS (%)	< 1 MS (%)	up to 2 MS (%)	up to 2 MS (%)
	1990	2000	1990	2000
Xalapa	24.37	19.70	66.10	54.91
Campeche	24.04	20.03	64.51	54.05
Acapulco	23.92	16.01	61.86	57.30
Mérida	22.65	13.80	63.89	50.81
Tuxtla Gutiérrez	21.11	16.44	58.37	46.13
Torreón	18.86	5.69	65.50	40.74
Oaxaca	18.14	11.93	59.51	36.99
Tampico	17.78	8.80	49.08	35.66
Pachuca	17.73	9.61	60.08	41.88
Villahermosa	17.50	14.19	49.44	40.80
Distrito Federal	17.30	8.48	60.32	42.77
San Luis Potosí	16.85	7.44	61.17	39.50
Cd Victoria	16.78	8.36	60.04	40.29
Puebla	16.60	10.42	57.98	40.46
Chetumal	16.38	5.69	49.15	17.65
Veracruz	16.18	10.22	51.57	41.93
Chilpancingo	16.03	12.95	54.81	39.80
Morelia	15.57	8.96	53.10	36.09
Zacatecas	15.43	7.92	58.34	36.18
Guadalajara	14.84	6.43	55.43	33.48
Guanajuato	14.76	8.23	59.68	34.27
Durango	14.66	7.56	57.02	40.28
Tlaxcala	14.48	10.14	56.24	36.13
Toluca	13.24	6.64	54.65	36.87
La Paz	12.83	6.61	52.19	32.96
Aguascalientes	12.71	5.84	56.21	33.78
Saltillo	12.54	3.10	56.60	22.64
Tepic	12.08	11.42	46.11	39.25
Monterrey	11.78	3.06	59.78	26.54
Querétaro	11.37	4.64	46.62	26.97
Cuernavaca	10.78	7.88	47.32	36.60
Colima	10.74	10.65	45.06	37.25
Culiacán	10.52	5.53	49.56	37.13
León	10.20	6.13	42.44	32.22
Mexicali	9.70	2.93	42.60	21.13
Chihuahua	8.36	2.79	45.43	19.70
Cancún	7.94	10.00	31.78	66.20
Tijuana	6.46	2.34	33.30	17.41
Hermosillo	6.23	4.66	41.06	29.59
Cd. Juárez	5.55	2.40	44.00	38.73

Source: Censo General de Poblacion y Vivienda 1990, 2000.

MS = Minimum salary (\$4.50 dollars per day on average).



The border region has normally a low percentage of low-income earners due to higher living costs (convergence of prices with USA) and also higher salaries and wages paid by assembly companies located plentifully in border cities.

The case of Cancun attracts the attention with its augment of low-income earners in more than double. The city, being a tourist centre not only for the region but also for the country, has pull in people from many other places, especially from small localities in the Yucatan peninsula. They are employed in the low skill market as waiters, cleaners, kitchen cleaners, rubbish collectors or night guards. Yet, massive migration to this tourist centre has lead to large pools of labour, pushing salaries down due to an excessive supply. In most cases they receive the minimum or in good cases twice the minimum salary. This has come to contribute to increase the number of people at the bottom level without any detriment for the city's economic growth.

In the majority of the cities, the salaries are in levels below five times the minimum salary. In 1990, Xalapa, Campeche, Merida, Acapulco and Tuxtla Gutierrez had the highest percentage of workers earning less than one MS. On the contrary, Ciudad Juarez, Hermosillo and Tijuana had the highest percentage of population receiving more than 5 minimum salaries. In 2000, the trend did not change significantly at the top, low-income cities remain constant with only one change: Merida, which progressed massively, cutting the number of very low earners in almost a half. Places with a reduced percentage of low earners performed well and no changes occurred.

In 2000, only 5 cities had 50% or more of their population earning up to two minimum salaries, from 25 in 1990. Mexico, it could be said, had an economic development process since the low earning population diminished from an average of 52.68% in 1990 to 37.56% in 2000. It is a big achievement if the 1994 economic crisis is considered. From the sample, 26 cities performed above the average, 8 just three points above the average and only 6 cities were considerably above the average.

It is possible to argue there was indeed an economic development process in the last 10 years. However, it is important to analyse the information about the “upper earners” to know whether or not the percentage of this section of the population increased.

**Table 7.6**  
**Percentage of population with high income**

	Pop + 5 MS 1990	Pop + 5 MS 2000
Cancún	17.23	38.65
Tijuana	16.11	23.92
Hermosillo	15.87	17.25
Querétaro	14.48	22.43
Cd. Juárez	13.81	16.22
Cuernavaca	13.30	17.65
Mexicali	13.07	22.34
Chihuahua	13.07	22.31
Colima	11.97	17.31
León	11.88	13.96
Monterrey	11.69	18.93
Guadalajara	11.46	15.65
Toluca	10.82	16.06
Culiacán	10.45	15.23
Puebla	10.35	15.86
Tampico	10.34	19.19
Tepic	10.33	14.63
Villahermosa	10.20	19.02
Veracruz	9.90	16.56
Saltillo	9.80	19.21
Morelia	9.68	16.20
Mexico City	9.64	15.60
San Luis Potosí	8.96	16.63
La Paz	8.86	16.83
Pachuca	8.82	16.70
Aguascalientes	8.70	17.08
Tuxtla Gutiérrez	8.18	13.84
Durango	7.96	15.03
Mérida	7.96	15.57
Torreón	7.90	14.53
Oaxaca	7.58	13.72
Guanajuato	7.44	13.98
Zacatecas	7.29	17.53
Tlaxcala	7.24	16.18
Xalapa	7.14	13.87
Cd Victoria	6.74	16.08
Chilpancingo	6.36	11.20
Chetumal	5.57	4.60
Campeche	5.25	11.45
Acapulco	4.97	7.18

Source: Censo general de poblacion y vivienda, 1990, 2000.

The previous table gives some insights regarding the distribution of population with what is considered in the Mexican context the “high income earners”, those making more than 5 times the minimum salary. From the sample of cities, all but Chetumal increased the percentage of people in this category. More people began to earn more

than 5 minimum salaries in general, confirming the notion that there was economic development for the past decade in Mexico. In 1990 the average of top earners was 9.96% and ten years later the average moved up to 16.65% of the employed labour force.

It has been argued that after economic recessions, poor cities tend to catch up with rich ones (Tondl, 2001). Mexican cities do not conform with such contention, at least in the period of the data. The trend continues not just keeping the gaps but increasing them, in some cases at levels that result impossible to conceal. The case of Cancun and Chetumal both located in the state of Quintana Roo illustrates clearly the problematic. While the first has almost 40% of the employed labour force earning more than 5 MS, Chetumal is struggling to keep no more than 5%. So far, all tables portray the same economic situation for all cities: poor cities remain in the same condition with almost no opportunities to improve their results in comparison with others, while rich ones just maintaining the pace are able to increase the economic gap.

There is an important component biasing the previous results that should be mentioned. Firstly, inflation rates fluctuate between places along the country. Border cities are prone to higher inflation rates due to exchange rates, and consequently, salaries and wages are higher than in many other regions. Another important component arises from the cost structure of international assembly companies or *maquiladoras*, which pay better salaries than local companies in order to attract better skilled people, so that they push salaries up without affecting their competitiveness. The minimum salary in Mexico is approximately \$4.5 USA dollars per day, while in the USA the same amount of money pays only less than one hour of labour. This is the main reason for such “generosity” from assembly companies.

There are also cities as Monterrey, Queretaro or Hermosillo with a high percentage of top earners. Nonetheless, other factors are affecting the salary structure in these places such as a tight labour market and the kind of activities inherent to the cities. For instance, Monterrey has a long history as a manufacturing centre, but in the last 5 to 7 years, most of the important financial companies and banks moved to the city. Today, the financial service sector is greater in employment terms than the manufacturing in



this city. What is more, headquarters from the USA, Canada and other parts of Mexico are locating in Monterrey due to its financial importance and good communication systems. These kinds of activities attract people earning at the top of the salary scale.

The following table, 7.7, provides a comparison of rankings between the manufacturing and service sector earnings for the years 1994 and 1999. There is a clear pattern shown in the table: cities that were in the first positions in the manufacturing sector in 1994 are in the first positions in the service sector for 1998. This trend goes according to international movements since important cities in the world are becoming more focused on pulling in the service sector oriented business. Clearly the big cities are more successful in this task. Scale economies are an important variable to generate synergies in terms of telecommunications, financial services and information availability. What is important here is how the cities in the last 5 places for manufacturing are also at the very bottom of the table for the case of services. This can mean two things; either the cities are entirely dedicated to the agricultural sector or in the extractive sector (oil extraction). In either case, rather than a benefit, the strategies followed by these local governments are producing negative effects.

Even though the data point out that some cities are at the medium position in the table either as manufacturing or as service centres, this has to be read carefully. Mexican cities are not exempt from the traditional problem of the registration of the company, on one hand, and the place where it carries out its operations on the other. It is well known that companies can have their corporate offices in a different city from the one where they undertake their productive activities.

Ranking the cities according to their manufacturing and service earnings gives the opportunity to analyse income patterns, which are very important when looking at economic development issues. For instance, even when Ciudad Juarez is considered an “assembly city”, the service sector generates more income for the city than the manufacturing sector.

**Table 7.7**  
**Manufacturing and service earnings ranking, 1994, 1999**

	POSITIONS			
	Manufacturing		Services	
	1994	1999	1994	1999
Querétaro	1	2	6	15
Toluca	2	4	23	19
Monterrey	3	7	2	2
Cuernavaca	4	6	17	14
Hermosillo	5	11	8	13
Veracruz	6	1	10	16
Mérida	7	26	11	20
Tampico	8	8	15	21
Villahermosa	9	9	22	17
Mexico city	10	3	31	1
San Luis Potosí	11	10	20	25
Guadalajara	12	13	3	11
Mexicali	13	5	14	18
Chihuahua	14	12	13	10
Saltillo	15	14	16	4
Puebla	16	21	24	23
Aguascalientes	17	17	26	24
Tijuana	18	16	5	8
Cd. Juárez	19	15	7	7
Tlaxcala	20	18	38	39
Tepic	21	19	35	36
León	22	29	12	6
Cancún	23	37	1	3
Torreón	24	22	4	12
Xalapa	25	32	34	5
Culiacán	26	23	19	27
Morelia	27	30	30	34
Durango	28	25	18	26
Acapulco	29	31	9	9
Pachuca	30	33	27	30
Cd Victoria	31	36	37	31
Guanajuato	32	20	21	22
Campeche	33	27	33	29
Chetumal	34	28	39	33
La Paz	35	24	25	28
Zacatecas	36	34	29	38
Colima	37	35	32	32
Oaxaca	38	39	36	35
Tuxtla Gutiérrez	39	38	28	37
Chilpancingo	40	40	40	40

Source: Censos industriales y comerciales, 1994, 1998.

The global trend is moving toward a bigger service sector base because it pays higher salaries on average mainly due to the fact it requires more educated people. This contention is easily questionable in most of the cases for Mexican cities with the

exception of some really world cities within the Mexican economy, generally the big ones, like Mexico City, Guadalajara and Monterrey.

Although partially, the ranking gives insights about the dynamics of the earnings in both sectors. Thereby, after the slump in which the Mexican economy went through at the end of 1994 and 1995, the cities were somehow reorganised. The earnings in manufacturing increased in 1999 mainly in the second part of the table, moving first-place earners to lower positions. This movement can be explained as a relocation of some manufacturers in places with lower labour costs but still close to important markets and production centres, like Torreon and Tepic in the Centre-North, and Tlaxcala and Guanajuato in the Centre. Even more radically the same trend can be observed for the service sector, with some real exceptions as Monterrey and Mexico City.

Negative economic shocks always tend to push salaries and wages down as consequence of massive redundancies. Within the ranking, it can be said that the top earner service sector cities lost their positions to manufacturing centres. The reason seems to be an attempt to concentrate all kinds of activities in a few places to save money, taking advantage of agglomeration economies. In this way, there was an even greater concentration of economic activities in just few cities after the crisis.

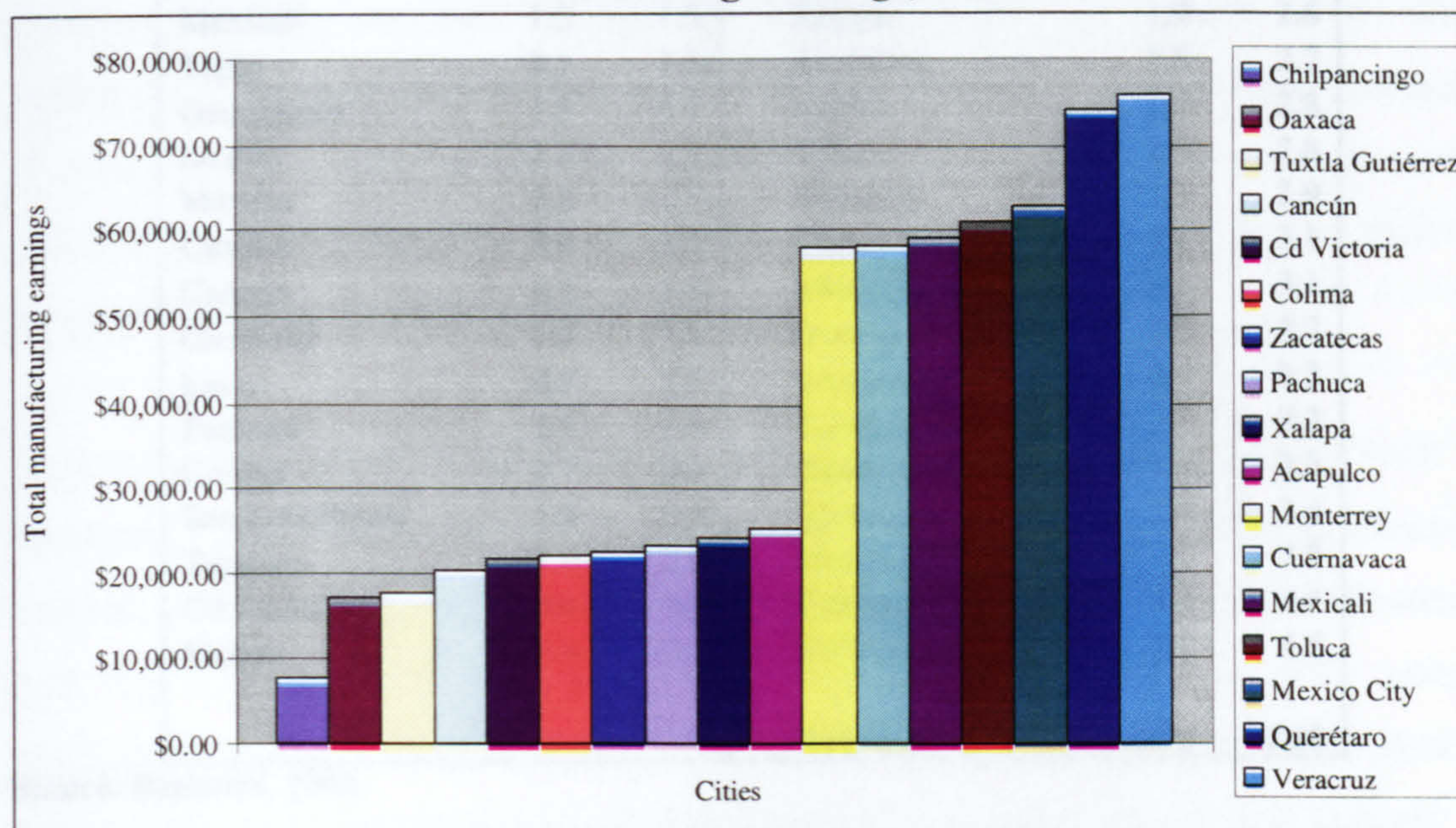
Table 7.7 also points out how some cities are increasing their economic potential through enhancing their service sector earnings without disregarding their manufacturing activities. Examples are Monterrey, Guadalajara and Hermosillo to name but a few cases. However, the trend is clear: a greater participation of the service sector is due to its higher value added and higher salaries, less generation of pollution and the need for people with higher levels of education. All this means for local and regional governments a bigger tax base and thus, more income through direct taxation and more local expenditure.

It is expected that cities within a country display a variety of characteristics regarding their economic, social and cultural activities since the background also differs. In graph 1 it can be seen how manufacturing activities are distributed unequally along the Mexican territory. It also can be inferred a population issue, the top earners in the



graph are the megalopolises which means that bigger cities, by simple scale production, tend to increase their salaries due to gains in productivity, specialisation or simply by selling large quantities of products.

**Graph 7.1**  
**Manufacturing earnings, 1998**



Source: Elaborated with data from Censos industriales y comerciales, 1998.

Employment growth depends largely on the economic growth of a country and on the adaptation level of the real salary and wages to the changing market conditions of the labour market. In the last 10 years there had been no significant unemployment problems in terms of the urban unemployment rates envisaged on government statistics. They have been systematically low (under 4%), but in 1995 and 1996 when they reached levels above 6%. However, this is due to the lack of an unemployment insurance system to allow the population to stay out of work for long periods.

Table 7.8 provides the unemployment rates for the years 2000 and 2001, varying from less than 1 to almost 5 per cent and only 16 cities are over the average for 2001. Comparing these results with others presented previously helps explain more deeply the unevenness of the Mexican economic system.



**Table 7.8**  
**Unemployment rate, 2000 and 2001**

City	2000	2001	City	2000	2001
Acapulco	1.2	0.5	Aguascalientes	2.3	2.3
Tijuana	1.2	0.9	Culiacan	2.5	2.3
Cuernavaca	1.7	1.4	Guadalajara	1.7	2.3
Campeche	2.0	1.5	Queretaro	2.5	2.3
Merida	1.1	1.5	Villahermosa	1.7	2.6
Mexicali	1.5	1.5	Xalapa	1.9	2.6
Tepic	2.1	1.5	Zacatecas	2.5	2.7
Guanajuato	1.5	1.7	Saltillo	2.1	2.8
La Paz	2.3	1.7	Toluca	1.9	2.8
Morelia	2.2	1.7	Veracruz	2.9	2.9
Oaxaca	2.4	1.7	Chihuahua	2.1	3.1
Cancun	1.3	1.8	Mexico City	2.5	3.1
Chetumal	1.5	1.8	Durango	2.6	3.2
Leon	0.9	1.8	Monterrey	2.2	3.2
Pachuca	2.5	1.8	Torreon	2.1	3.2
Colima	2.7	2.0	Tuxtla Gutierrez	1.9	3.3
San Luis Potosi	1.9	2.0	Tlaxcala	1.9	3.4
Tampico	1.6	2.0	Hermosillo	2	3.5
Cd Juarez	0.9	2.1	Chilpancingo	2.4	4.4
Puebla	1.8	2.2	Cd Victoria	2.5	4.6
			<b>Average</b>	<b>1.96</b>	<b>2.40</b>

Source: Banamex, 2002.

Low unemployment rates could be associated with medium size cities, but at the same time low unemployment also means low salaries, although there are a couple of “natural” exceptions like Tijuana and Mexicali. The first 13 in table 7.8 are the last 13 in table 7.6, an almost perfect inverted relation that proves again how a tight labour market induces better salaries.

All the previous information has great implications for the labour market, mainly pushing real salaries and wages down. Table 7.8 helps to appreciate the inequalities manifested in the cities. Grouping the cities into geographical regions shows that the cities located in the Yucatan peninsula have the lowest unemployment rate for 2001. Border and Northern cities performed above the average rate. In order to explain this fact, it is important to cite the world economic slump in 2001. The USA had an economic recession affecting Mexico due to the raised level of economic integration between the two countries. The natural consequence is a higher unemployment rate in those places with more trade with the USA.

As a matter of fact, for the rest of the country, and of course for those cities with business not linked into the international trade carrousel, the impact of the USA recession was much lower, as it can be observed in the previous table.

Comparing unemployment and GDP per head it is possible to find notorious contrasts between the cities and their regions. The geography and the location of the cities within the Mexican system have created many advantages for some of them and many disadvantages for some others. The national government strategy has been to tackle unemployment creating jobs for everybody without putting attention to the national geography and the function of cities.

Data provide a good insight into the differences produced by elements such as closeness to the USA border and to big cities or their position in the national transport system. Other cities have developed their assets to generate a competitive advantage like the case of cities with harbours (Veracruz and Tampico) or with natural landscapes (Cancun, Acapulco). So far, national policies have been unable to identify and accept these asymmetries, creating prosperity in some places and poverty in others.

This analysis evidences the actual problematic in Mexico and somehow contributes to explain the social problems of the country. It is clear that in the national context the big cities are getting bigger and what is more, richer. They are living a positive spiral where almost all their citizens benefit. On the contrary, poor cities are fighting for improved conditions and more business opportunities. Since a low GDP also means low tax collection, contracted markets, low salaries, and more poverty, the emphasis should be addressed in the reduction of economic gaps between cities but without compromising the wealth of the rich ones.

### **Infrastructure**

Infrastructure is the other factor playing a significant role to induce growth and development. This factor is considered relevant by academics and practitioners as the one of the four key factors (together with Government, Human Capital and Economic conditions) to improve economic conditions in an urban area.



The importance of the factor relies on its capacity to influence business performance. Companies must be able to move raw materials, final products and people to carry out their every day productive process. This is not just for manufacturing companies but also for any kind of companies. Yet, service companies require sometimes more accessibility than manufacturing companies due to the fact that people need to travel between places. Airports, train stations and communication centres represent the hallmark for competitive and attractive cities if they are to pull in investment.

As in almost any third world country, the construction of infrastructure in Mexico at city level has been uneven and fluctuating along time. Even though big cities such as Monterrey and Guadalajara have more resources to increase or to improve their stock of roads, local governments have used the money to cover other aspects of public administration. However, this fact has not deterred investors from locating in cities already congested or with constrained local labour markets.

Table 7.9 presents an indicator of the road infrastructure. The cities were sorted according to their results in the year 2000. Not surprisingly, the most isolated places are in the first places due to their need to be integrated into the national transport system. The lowest values are for those places located close either to big cities or to Mexico City. This is an expected result from a centralised country where four or five cities are controlling a great proportion of the flows of goods and services all over Mexico. In conclusion the rationale is:

- a) Cities located far from main five important cities (Mexico City, Guadalajara, Monterrey, Merida and Tijuana) require consequently more roads to access these markets.
- b) Cities located in the near by area of Mexico City or its periphery do not require too much investment in roads, geographically they are close to the important market.
- c) Cities isolated in their own regions need more roads and motorways in order to be connected to other places.

**Table 7.9**  
**Kilometres of Roads**

City	Km per 10,000 inhabitants		
	1998	1999	2000
Chetumal	109.45	109.29	109.20
La Paz	57.06	55.32	84.51
Hermosillo	45.56	47.07	46.70
Culiacán	32.82	31.05	31.84
Zacatecas	28.28	27.15	26.59
Durango	19.84	19.50	20.63
Colima	18.48	19.28	19.39
Campeche	17.92	19.19	19.38
Oaxaca	16.93	16.89	16.75
Torreón	13.96	13.74	13.92
Saltillo	12.27	11.84	12.13
Guanajuato	11.26	11.33	11.60
Villahermosa	11.83	11.55	11.39
Tepic	9.60	9.23	8.98
Cd Victoria	7.70	7.39	8.98
Chihuahua	6.83	7.71	7.51
Cancún	7.96	7.54	7.17
Chilpancingo	6.69	7.18	7.12
Tlaxcala	9.67	9.35	6.96
Aguascalientes	5.81	5.66	5.44
Tuxtla Gutiérrez	5.19	5.73	5.42
Mexicali	4.43	4.43	5.34
Morelia	3.71	5.58	5.34
Querétaro	5.53	5.01	4.95
San Luis Potosí	6.15	2.49	4.83
Cd. Juárez	4.86	4.74	4.68
Mérida	2.58	4.31	4.51
Pachuca	2.81	3.02	3.72
Xalapa	3.89	3.79	3.71
Puebla	3.20	3.23	3.22
Acapulco	2.90	3.08	3.11
Cuernavaca	2.21	2.19	2.17
Toluca	3.09	3.04	1.96
Veracruz	1.88	1.82	1.81
Monterrey	1.40	1.37	1.70
León	1.48	1.47	1.42
Tijuana	2.76	2.74	1.28
Guadalajara	2.12	2.08	0.55
Mexico City	0.41	0.41	0.29
Tampico	0.24	0.24	0.24

Source: Anuarios estadísticos de los estados, 1998, 1999, 2000.

The most populated cities performed very badly in this indicator as it was expected. A normal consequence in large urban areas is traffic congestion and an overuse of land

spaces giving few alternatives to local governments to build roads or motorways to alleviate the problem.

The geography of Mexico adds complexity to the development of infrastructure. In the Northern part, population settlements are dispersed and no medium or large cities are close. The "V" shape of the country from the centre to the north increases isolation in the Northern part. Thus, cities require more roads to satisfy their minimum requirements to import and export goods and services to and from other regions. For instance, Hermosillo has the nearest city at 785 km away and Mexicali and Tijuana have "the next" city, Nogales, at 670 km away. The same problem arises in the Yucatan peninsula and the south pacific region.

Contrary to economic conditions that are so influenced directly in the short term by governments, the infrastructure in a place is used as a political "weapon" to buy votes in local or regional elections. Hereby, the construction of roads and motorways in many cases is subject to political will. However, there is another component in the construction of infrastructure: the disposable resources of local, regional and even national authorities. Even when governments would like to build bridges, roads or airports, the limitation of resources is there and the planning process establishes priorities.

Certainly, there are different infrastructure works in terms of magnitude and thus in price and time span. A bridge over a small river requires fewer resources than a 10 kilometre motorway extension. Besides, the trend to build more works before elections biases the analysis. Well documented in the literature elsewhere is the strategy followed by regional and local authorities to wait until the year preceding elections to build roads and monumental civil works such as big buildings, squares, parks and in general everything that could be seen as evidence of the government's generosity.

The timing of the infrastructure investments influences the behaviour of many other economic entities. The private sector knows that governments tend to undertake works almost at the end of the political periods. The economic implications of such behaviour are:



*a) Clear economic cycles in the city and region induced by authorities at local and regional level.*

Ironically, this fact makes the planning for the private sector and other investors from outside the city very complicated. Although the local economy could be more or less forecast, it is not possible to predict external shocks from either other regions or from other countries. For example, the regional cases of Campeche and Tamaulipas with forthcoming regional and local elections in 2003, suffered a political and economic slump due to national budget cuts and transferences to regions in 2001 and 2002. The reasons were a 0% growth of the national economy and a low oil price leading to the reduction in funds for both regions and cities.

*b) Long periods of low public expenditure and short periods of abundance.*

Derived from the economic fluctuations and the conditioned behaviour of both public (local and regional governments) and private investors, the local economy suffers a chronic condition of a few years of low growth and one or two years of expansion at high levels. This becomes a problem in terms of prices because suppliers adjust their prices to face the high demand of the period, and unfortunately prices do not go down again to cope with the new demand level. The process impoverishes buyers and sellers and constraints even more the local market after the economic boom.

Some local and regional governments (Mexico City, Monterrey, Guadalajara, and Chihuahua to name but a few) ruled by opposition parties have created “locks” to exert a public expenditure greater than 20% of the total budget in the last two years of government. In this way, local governments tend to spend their resources more steadily. There is still a great resistance by the PRI (Institutional Revolutionary Party) governments to introduce the same rules with the argument that urban authorities are free to act as they want (the PRI party ruled Mexico for 74 years in a row and it was considered by many intellectuals and academics as “The perfect dictatorship”).

The implications for economic development are basically two: a better economic performance for the big cities (all of them ruled by opposition parties), and more immigration to them with the well-known scale diseconomies like more pollution, stacking, traffic congestion, etc.

*c) Speculation by private sector to carry out business transactions.*

Since it is possible into some extent to forecast when the public sector will exert massive investment, private investors usually speculate with the prices of land and material required for the works. During the first years of the government in power, private investors try to gather information about the places where infrastructure works will be undertaken to buy land close to them or to build offices or houses that will increase their value in a very short period of time.

Speculation damages the urban population in various ways. Firstly, prices are higher than the average because housing builders will sell with a price taking into account the construction of the government work. Secondly, employment and unemployment rates vary and workers know that in the first years of the new government the economy will move slowly. The local market is usually constrained and then expands to levels that compensate the slow motion of the first years. Thirdly, the gains of speculation go to those with contacts in the local government and money to invest, increasing the gap between rich and poor people.

*d) Delays on making decisions impacting on the urban area.*

Infrastructure works are usually long term projects that require long planning and large amounts of resources both human and monetary. Sometimes local and regional governments claim that a work is going to start at a specific date and it does not. Reasons vary from the “lack of capital” to “inappropriate economic conditions”. The point is: the lack of a real commitment by governments to free up the capital for builders and other suppliers creates extra expenses paid by society.

Decisions to build roads and bridges to connect small and isolated communities are put on stand-by simply because the bureaucratic system does not process the information on time. The construction and provision of social services (potable water pipes, electricity and sewerage) in new settlements within the city is as important and expensive as the construction of new road and motorways. However, there is no attention to time aspects by local governments and it is a mistake costing so much to society, since money has a greater value now than in the future.

Another implication is the lack of people in the local labour market to carry out the work with the added extra cost of bringing people from elsewhere to do the job. For example, in 1996, the local government of Monterrey was planning to enlarge the central city's avenue since the previous year. For reasons still unknown, the decision was postponed for the next year. Ironically, it had to wait two years more in order to begin the works without incurring in extra expenses due to the lack of construction workers and leasing companies demanding excessive prices.

## Government

Local governments play a key role in the administration of public finance and the formulation and expedition of laws and rules to nurture economic activities, population and institutions. Governments are supposed to create a stable business environment to generate new businesses and therefore accomplish the demands of the market without damaging the cost structure of the companies. This is a paramount issue to create competitive cities able to attract new investment.

Corruption and inefficiency have been common factors to many local and regional governments. It is not by a chance that Mexico has been considered by the Fortune Magazine as the 5<sup>th</sup> country in the world in terms of corruption. A lack of public service career adds more problems to the local government due to the incapacity to keep employees motivated to confront the users' demands and therefore to provide a reliable service. Official papers are frequently lost, bribes required by employees to perform their duties and a complicated and chaotic system to process paperwork for start-ups companies are just some examples of an under-performing bureaucracy. A simple example is the number of steps taken to open a new company: 72 and its price: \$6800.00 USD dollars, for something that in most countries is almost free.

All government decisions must be supported by an adequate fiscal policy, resulting from the tax burden imposed to people and companies. In this way, the income can be reinvested fairly in the society to improve the living conditions of the population.

Table 7.10 sets forth data for social expenditure by local governments where it evidences the injection of more funds into the economy due to political and economic



purposes (2000 presidential election). It also shows that while the average inflation rate for the period of the data is 22%, the resources spent went up by more than 200%.

**Table 7.10**  
**Per capita social expenditure, \$ pesos**

	Social expenditure, per capita 1998	Social expenditure, per capita 1999	Social expenditure, per capita 2000
Aguascalientes	161.59	311.50	394.69
Mexicali	137.73	204.75	270.37
Tijuana	111.50	112.57	198.17
La Paz	1.35	7.67	174.37
Campeche	19.64	19.32	57.59
Saltillo	26.81	57.00	154.61
Torreón	69.99	172.48	284.34
Colima	53.72	219.06	384.41
Tuxtla Gutiérrez	35.95	58.53	32.29
Chihuahua	296.40	178.99	328.94
Cd. Juárez	133.41	233.26	203.19
Mexico City	139.03	154.09	191.39
Durango	71.80	200.28	236.65
Guanajuato	119.47	140.05	299.41
León	68.48	77.83	365.68
Acapulco	41.56	33.25	14.55
Chilpancingo	4.75	24.38	29.20
Pachuca	10.89	72.54	248.51
Guadalajara	55.21	121.07	212.83
Toluca	40.23	62.53	115.17
Morelia	42.02	147.09	220.72
Cuernavaca	291.39	533.31	756.81
Tepic	20.61	66.72	46.59
Monterrey	135.90	163.82	255.35
Oaxaca	73.77	283.78	109.91
Puebla	94.94	166.88	269.24
Querétaro	372.86	482.46	538.10
Chetumal	14.43	228.39	248.55
Cancún	60.85	270.38	281.27
San Luis Potosí	30.44	53.49	44.24
Culiacán	44.68	143.60	164.80
Hermosillo	68.56	88.02	103.87
Villahermosa	215.97	284.92	651.97
Tampico	83.42	199.47	300.32
Cd Victoria	37.19	119.50	164.90
Tlaxcala	185.01	205.73	211.28
Xalapa	23.98	12.52	19.15
Veracruz	24.24	53.36	73.57
Mérida	90.76	113.43	251.67
Zacatecas	161.60	888.81	348.42
Average	91.80	174.17	231.43

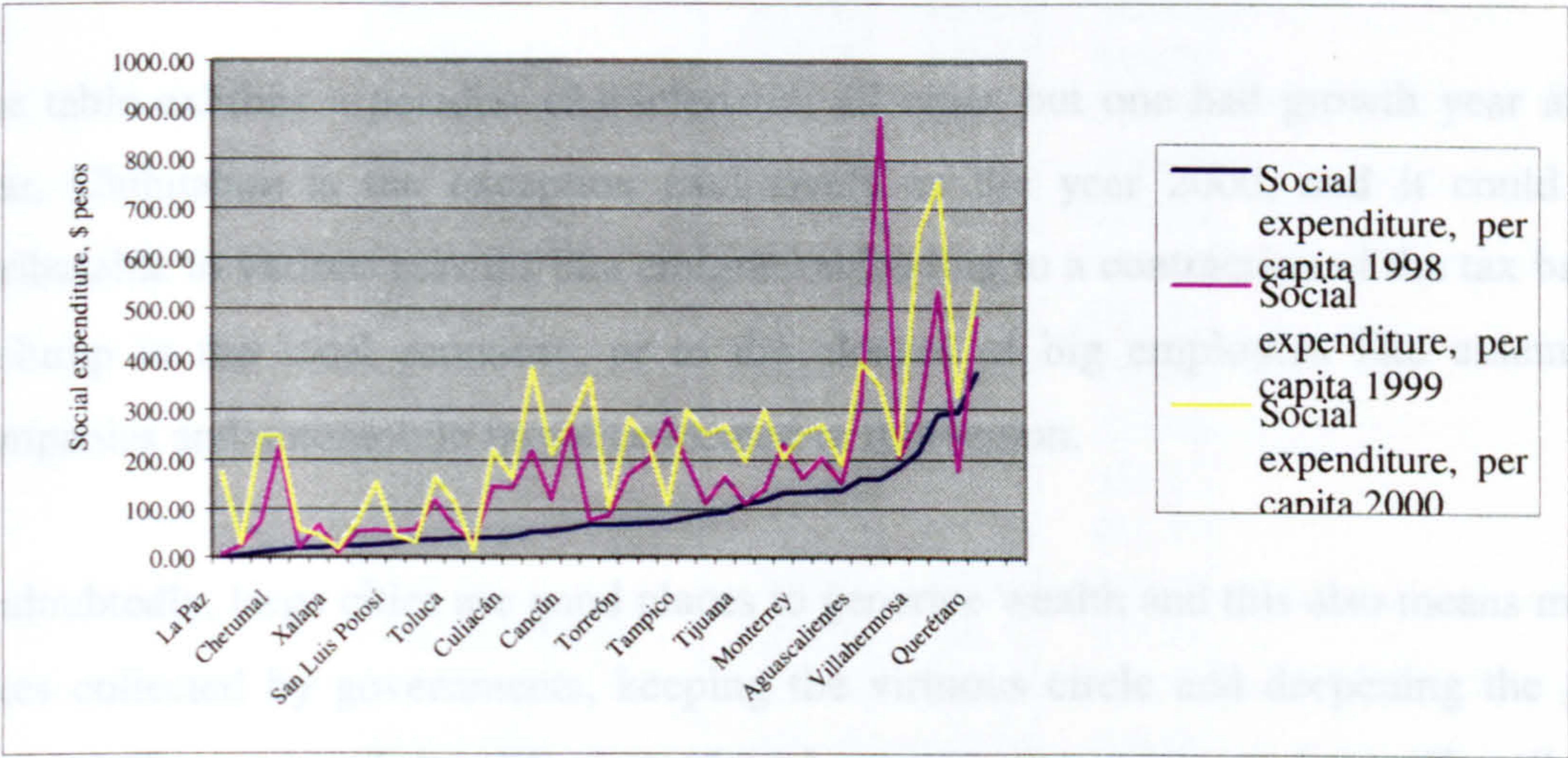
Source: Anuarios estadísticos de los estados, 1998, 1999, 2000.



Another important factor established in the table is the low expenditure in social issues by local governments which is on average \$231 pesos (23 USA dollars) per year. Xalapa, Acapulco and Tuxtla Gutierrez are the cities with the lowest social expenditure, well below the sample average. It is evident that richer cities spend more money than the poor ones. From the sample of cities, Acapulco is the only city with a declining expenditure over the three years in a row. What is more, it has the lowest per capita level for the year 2000 even though it was an exceptional year.

Graph 7.2 helps to look at the contrasts in the cities in two aspects: the differences in expenditure and how the expenditure in each city varied along the years.

**Graph 7.2**  
**Per capita social expenditure**



Source: Elaborated with data from Anuarios estadísticos de los estados, 1998, 1999, 2000.

In 1998 the maximum social expenditure did not reach \$400 pesos, with a minimum of less than \$20 (2 USA dollars), contrasting with 1999 where the sample reached a maximum of almost \$900 and a minimum of \$7 pesos. The lowest values in these two years corresponded to the city of La Paz, situation that changed in 2000 with a per capita expenditure of \$174 pesos.

It can be seen graphically that only few cities saw their budget reduced and although the period of time might not be statistically significant, there are two trends not possible to neglect. Firstly, substantial increase in social expenditure more adequate to



the needs of the population but still far away from international standards. Secondly, there is an attempt to reduce the differences amongst cities mainly through central government direct transfers to those places not capable of collecting enough resources (via taxation) to finance their plans to improve their economic situation.

It is difficult to expect that cities spend more money than they obtain from taxes or transfers from the central government. It can be appreciated from the table below that cities invest in social issues a reduced percentage of what they obtain. Indeed, the significance of the rows in the budget are quite relevant for any economic purposes, it is also important to quantify how much it is received. Yet, it has to be noted that depending on the economic development stage or particular situations of each city and the country, governments decide how to allocate their resources. But the question is; how much the cities receive from the tax collection?

The table exhibits a peculiar characteristic; all cities but one had growth year after year. Chihuahua is the exception exclusively in the year 2000, and it could be attributable to various reasons like emigration leading to a contraction of the tax base, a slump in the local economy, or to the closure of big employers like assembly companies and automobile factories located in this region.

Undoubtedly, large cities are good places to generate wealth and this also means more taxes collected by governments, keeping the virtuous circle and deepening the gap between the poor and the rich cities. Local governments must work to offer all the basic services to their population keeping in mind that a large proportion of it exists in deprived conditions due to neoliberal policies in the 1990's aiming to leave the organisation of cities and their populations to the market forces. The neoliberal experiment undertaken by the president Carlos Salinas de Gortary (1988-1994) did not work as the evidence suggests.



**Table 7.11**  
**Local Government gross income per capita**

	1998	1999	2000
Aguascalientes	541.13	774.01	1367.66
Mexicali	1196.40	1551.63	1726.69
Tijuana	610.21	887.26	1043.72
La Paz	656.41	817.95	1063.69
Campeche	629.65	693.95	846.71
Saltillo	304.76	400.06	636.01
Torreón	409.57	583.52	821.34
Colima	612.71	1017.33	1280.10
Tuxtla Gutiérrez	281.14	369.07	427.40
Chihuahua	841.53	920.48	866.55
Cd. Juárez	601.20	714.18	949.95
Distrito Federal	541.48	632.74	714.49
Durango	344.63	571.84	739.34
Guanajuato	445.49	496.81	903.27
León	301.85	329.70	943.61
Acapulco	371.66	439.24	896.44
Chilpancingo	201.98	501.14	515.16
Pachuca	215.91	500.79	555.64
Guadalajara	468.98	673.62	946.88
Toluca	292.36	406.00	523.30
Morelia	204.26	378.05	503.88
Cuernavaca	559.95	903.78	1228.53
Tepic	417.07	483.20	580.39
Monterrey	588.09	784.28	1092.72
Oaxaca	564.73	868.53	969.05
Puebla	329.71	482.81	757.74
Querétaro	555.33	665.57	833.33
Chetumal	303.07	741.76	825.17
Cancún	774.90	1102.42	1218.33
San Luis Potosí	283.14	380.33	471.44
Culiacán	409.72	579.70	709.84
Hermosillo	651.13	611.92	788.02
Villahermosa	616.42	613.84	1171.83
Tampico	490.44	723.60	953.56
Cd Victoria	326.16	543.04	695.81
Tlaxcala	621.02	619.44	759.73
Xalapa	309.86	355.26	421.03
Veracruz	353.02	531.85	709.72
Mérida	303.86	329.01	679.55
Zacatecas	695.27	888.81	1174.30
Average	480.65	646.71	857.80

Source: Anuarios estadísticos de los estados, 1998, 1999, 2000. Includes all taxes collected at local level and income derived from services provided by local governments.

### Human capital

Human capital is regarded as the most important factor in any economy and the source of competitiveness. In order to produce growth in a city it is indispensable to

rely on the inhabitants who live and work there. The benefits of training and education are long-term and cannot be assured nor easily assessed. Nevertheless, many successful cases have demonstrated that investing in human capital is the option so that countries, regions and cities can have access to more employment opportunities and adequate living conditions.

Trends such as globalisation and the automation of manufacturing processes explain why human resources, education and training have become the pillar of cities with a high development level, explained as higher income per capita, appropriate infrastructure and education, more and better hospitals, to name but a few. Thanks to a freer world market system, low valued added jobs have been relocated in places with low educational levels alleviating unemployment in poor regions of the world. This phenomenon is not particular amongst countries but also within them. Mexico has seen the localisation in the border regions of assembly companies from the USA and Japan mainly. The modernisation of education and the training provided by international companies have seen the rise of better-trained human resources in the regions, which now occupy supervision and directive positions with the consequent increase in labour costs. It explains why in the last four years these kinds of companies have re-localised in other regions, mostly in the south, where the labour costs are still cheap.

At the same time, the automation of manufacturing activities in more developed regions requires high skilled people with more education in areas like science and technology. The new competitive arena requires flexible human resources capable of learning new activities and adjusting to the changing productive environment.

Basically this section of the analysis will focus on three aspects of human capital: a) education, b) availability and c) labour environment due to their impact on economic development in urban areas.

#### a) Education

Education needs and training are difficult to measure due to a dependency on external sources and requirements beyond the city and region boundary. How many engineers, teachers or workers will be required at some point in time is almost impossible to

predict and on top of that the personal factor inherent to every individual adds on more complexity to the calculation. Besides, local governments face the problem of retaining high skilled people when there are no opportunities. The attempt to maintain engineers in some Mexican cities through disguised strategies (like scholarships and low-paid positions within local governments) has paid dividends at the expense of social programmes. All this just to attract companies and become competitive in the long term. Nonetheless, cities confront deeper problems as high illiteracy levels as table 7.12 shows.

**Table 7.12 Illiteracy rate, %**

City	1990	1995	2000	City	1990	1995	2000
Aguascalientes	3.69	2.90	2.51	Morelia	5.02	4.22	3.90
Mexicali	3.01	2.63	2.20	Cuernavaca	4.27	3.86	3.13
Tijuana	2.65	2.08	1.75	Tepic	3.61	3.31	2.92
La Paz	2.64	2.67	2.24	Monterrey	2.54	2.18	1.93
Campeche	5.86	5.75	4.94	Oaxaca	4.78	4.30	3.77
Saltillo	3.08	2.68	2.12	Puebla	4.06	3.58	3.19
Torreón	2.98	2.73	2.31	Querétaro	4.95	4.15	3.39
Colima	3.65	3.64	3.04	<b>Chetumal</b>	<b>7.44</b>	<b>6.76</b>	<b>6.03</b>
<b>Tuxtla Gutiérrez</b>	<b>6.81</b>	<b>5.88</b>	<b>5.19</b>	Cancún	3.90	3.42	2.75
Chihuahua	1.74	1.52	1.38	San Luis Potosí	3.66	3.28	2.75
Cd. Juárez	2.22	1.97	1.61	<b>Culiacán</b>	<b>5.29</b>	<b>4.72</b>	<b>4.49</b>
Distrito Federal	3.09	2.47	2.34	Hermosillo	2.36	2.15	2.02
Durango	2.48	2.22	2.03	Villahermosa	4.82	4.20	3.86
<b>Guanajuato</b>	<b>6.22</b>	<b>5.69</b>	<b>4.77</b>	Tampico	2.72	2.39	2.01
<b>León</b>	<b>6.56</b>	<b>5.78</b>	<b>4.90</b>	Cd Victoria	3.05	2.81	2.36
<b>Acapulco</b>	<b>7.66</b>	<b>7.42</b>	<b>6.73</b>	Tlaxcala	2.65	2.24	1.89
<b>Chilpancingo</b>	<b>8.52</b>	<b>7.91</b>	<b>6.69</b>	<b>Xalapa</b>	<b>5.79</b>	<b>5.26</b>	<b>4.29</b>
Pachuca	3.64	3.31	2.74	Veracruz	3.98	3.62	3.25
Guadalajara	3.28	2.86	2.50	Mérida	4.07	3.72	3.18
Toluca	5.49	4.39	3.61	Zacatecas	3.39	3.24	2.50

Source: Censo de Poblacion y vivienda, 1990, 2000 and Conteo de Poblacion, 1995.

Note: Percentage of the total population. It includes indigenous population able to read and write their dialect but not Spanish.

It can be inferred from the data that all the cities are making massive efforts to reduce the illiteracy rate to as low as 1.5%. The strategy of the president Ernesto Zedillo was to transfer completely the responsibility of education at regional level. Since then, the states and municipalities must achieve specific goals to tackle to endemic problems: the lack of formal education and the introduction of technologies to improve the population's skills to access more and better-paid jobs.



Growth and development require people to have at least basic education to enable them to look for well-paid jobs. Acapulco and Chilpancingo are the cities with the highest illiteracy level above 6% and again, border cities as Ciudad Juarez, Tijuana and Chihuahua were very close to the goal of 1.5% rate. It can be said that the “Maquiladora” programme has provided very good results due to the pressure exerted over local governments to provide education and diminish illiteracy levels. Also the competitiveness of these cities comes first in any ranking.

An objective analysis must clarify some details in favour of the cities with high illiteracy rates. Firstly, Tuxtla Gutierrez, Chetumal and Campeche, have a large indigenous population living at the edge of city “far away” from public services and transport connections, making very difficult to take children to school. Secondly, poor families regard formal education as a “waste” of time. They prefer to keep their children at home to help in the family business (normally a small shop). Thirdly, the “macho” and gender issue of women staying at home, which is still very rooted in the indigenous cultures of the south of Mexico where these three cities are located. Finally, there is a geographical factor: Tuxtla Gutierrez, Chetumal and Campeche are the closest cities to a jungle region where there are many small settlements with no opportunities for their inhabitants to go to school. Due to the remoteness of these places, people wanting to have education and access to other services must move in to any of these three cities.

In contrast, Northern cities have low illiteracy rates and enjoy better well-being levels. Albeit isolated and with less influence from the central government, this pseudo independence has increase their self-capacity to generate their own resources in terms of building on a educational stock and more human capital. Yet, Northern cities are big and have economies of scale not accessible to smaller places.

Other factor that must be analysed, as a counterpart of illiteracy, is the population with higher education, understood in the Mexican system as those people with 9 or more years of formal education. The table below can be read in two ways. First of all, from 1990 to 2000 the percentage of population in the sample with higher education decreased from 38% to 36.7%. This fact might be attributable to a bigger population growth rate rather than to a decrease in the number of people studying. The other

reading comes from an economic perspective where places with higher educated people become more attractive to companies and more competitive. In this way, it is not a surprise to see Cancun with almost 82% of the population having higher education.

**Table 7.13**  
**Population with higher education, %**  
**(16 years-old or older)**

City	1990	2000	City	1990	2000
Aguascalientes	33.18	34.29	Morelia	38.14	36.29
Mexicali	37.31	35.15	Cuernavaca	44.86	39.96
Tijuana	30.96	31.58	Tepic	41.35	38.35
<b>La Paz</b>	<b>44.84</b>	<b>46.56</b>	Monterrey	41.41	37.80
Campeche	37.12	34.68	Oaxaca	47.50	37.67
Saltillo	38.83	35.33	Puebla	41.64	38.28
Torreón	34.27	33.08	Querétaro	39.39	37.47
Colima	41.93	35.68	Chetumal	27.68	12.18
Tuxtla Gutiérrez	40.29	36.20	<b>Cancún</b>	<b>27.92</b>	<b>81.92</b>
Chihuahua	36.09	32.92	San Luis Potosí	37.86	36.17
Cd. Juárez	24.78	24.76	Culiacán	34.78	36.05
<b>Distrito Federal</b>	<b>41.82</b>	<b>41.09</b>	Hermosillo	42.52	36.92
Durango	35.90	33.07	Villahermosa	36.65	38.07
Guanajuato	28.18	30.59	<b>Tampico</b>	<b>47.14</b>	<b>42.60</b>
León	21.08	22.60	Cd Victoria	44.34	39.92
Acapulco	35.12	34.81	<b>Tlaxcala</b>	<b>52.01</b>	<b>43.88</b>
Chilpancingo	42.33	36.12	Xalapa	36.51	32.35
<b>Pachuca</b>	<b>47.61</b>	<b>42.01</b>	Veracruz	38.13	36.95
Guadalajara	32.25	30.53	<b>Mérida</b>	<b>43.61</b>	<b>40.21</b>
Toluca	37.26	37.36	Zacatecas	35.45	34.78

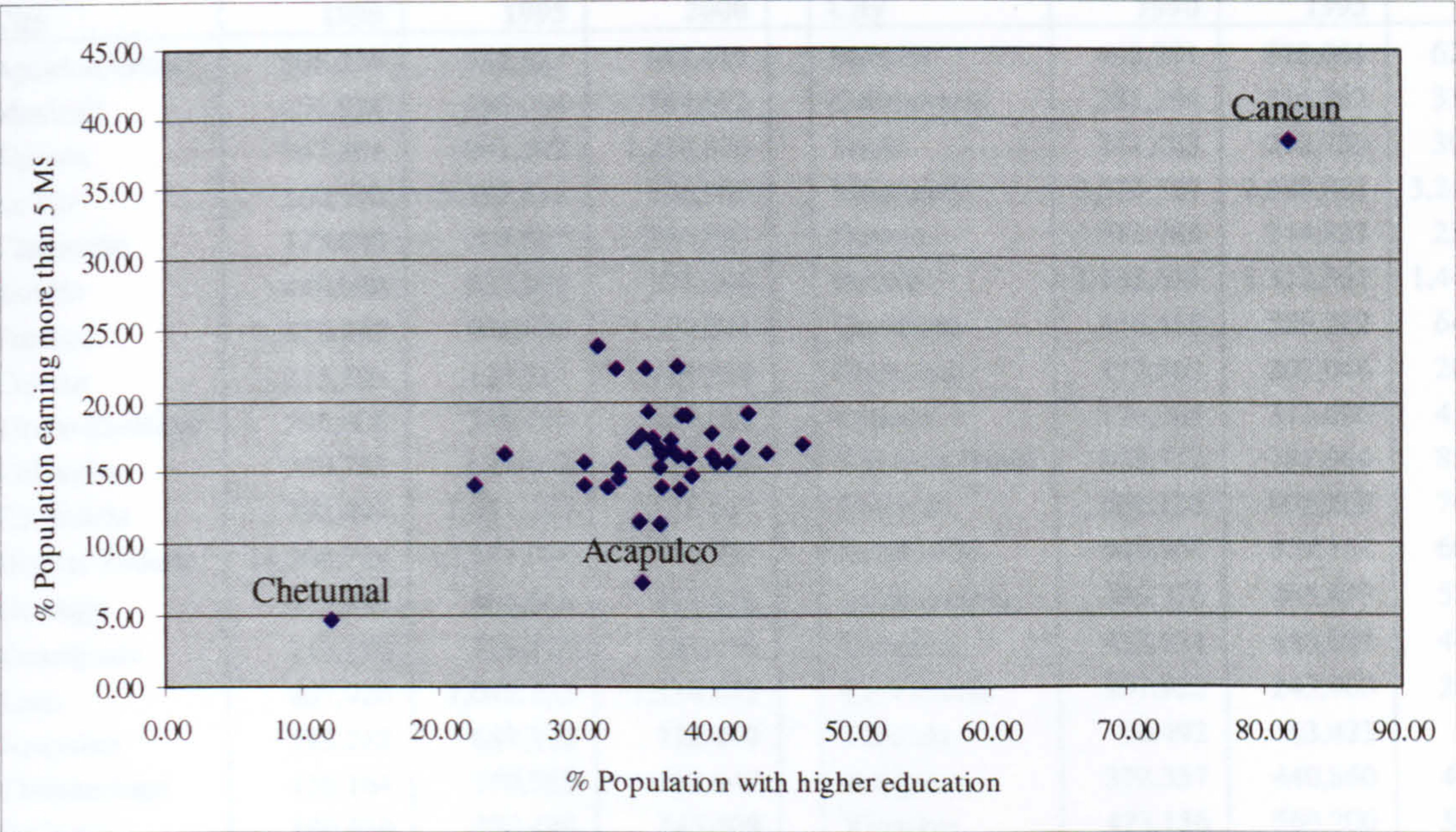
Source: Censos de poblacion y vivienda, 1990 and 2000.

Cities in bold are the exceptional cases when in the whole decade they have kept levels above 40%. Having a 27.92% in 1990, Cancun became the city with the highest value nowadays. Indeed, along the whole analysis this city is growing economically and having development as well. The contrary case is located in the same state, Chetumal, not having any increment, on the contrary, the city has only 12.18% of its population with higher education, the worst value whatsoever in the sample.

The following graph shows the relation between the educational level and salaries where the outliers are Cancun in the right-upper part and Chetumal in left-low part.



**Graph 7.3**  
**Higher education and higher salaries, 2000**



Source: Elaborated with data from Censos de poblacion y vivienda, 1990 and 2000.

It is important to mention the high convergence between the two variables selected in graph 7.3. Nonetheless, the possibility of having all cities under the same conditions as Cancun, regarded as the example to follow, would be harmful for the national employment rate since high salaries with the same kind of jobs would invariably lead to greater unemployment rates.

Acapulco could be regarded either as a city in transition toward a higher development level or as a city stagnated or moving backwards in the development process. With all the information and data examined so far, Acapulco appears as a place with great potential but low salaries and poor infrastructure seem to deter companies to locate in there. As a side note, Acapulco was in the 1960's and 1970's the equivalent of Cancun today, the most fashionable tourist centre in Mexico and regarded as the most prosperous city in those decades.

**b) Availability of Human Capital**

The simplest way to define the concept of “availability” of human capital is total population in a place at any given point in time.



**Table 7.14**  
**Total population, sample of cities**

City	1990	1995	2000	City	1990	1995	2000
Aguascalientes	506,274	582,827	643,419	Morelia	492,901	578,061	620,532
Mexicali	601,938	696,034	764,602	Cuernavaca	281,294	316,782	338,706
Tijuana	747,381	991,592	1,210,820	Tepic	241,463	292,780	305,176
La Paz	160,970	182,418	196,907	Monterrey	2,573,527	2,988,081	3,243,466
Campeche	173,645	204,533	216,897	Oaxaca	213,985	244,827	256,130
Saltillo	440,920	527,979	578,046	Puebla	1,135,631	1,312,351	1,446,710
Torreón	878,289	958,886	1,007,291	Querétaro	456,458	559,222	641,386
Colima	116,505	120,781	129,958	Chetumal	172,563	202,046	208,164
Tuxtla Gutiérrez	295,608	386,135	434,143	Cancún	176,765	311,696	419,815
Chihuahua	530,783	627,662	671,790	San Luis Potosí	658,712	781,964	850,828
Cd. Juárez	798,499	1,011,786	1,218,817	Culiacán	601,123	696,262	745,537
Distrito Federal	14,208,729	15,294,044	16,012,951	Hermosillo	448,966	559,154	609,829
Durango	413,835	464,566	491,436	Villahermosa	386,776	465,449	520,308
Guanajuato	119,170	128,171	141,196	Tampico	433,021	450,024	477,767
León	867,920	1,042,132	1,134,842	Cd Victoria	207,923	243,960	263,063
Acapulco	593,212	687,292	722,499	Tlaxcala	50,492	63,423	73,230
Chilpancingo	136,164	170,368	192,947	Xalapa	372,357	440,860	480,559
Pachuca	180,630	220,488	245,208	Veracruz	473,156	560,200	593,181
Guadalajara	3,870,417	4,279,424	4,458,667	Mérida	556,819	649,770	705,055
Toluca	1,047,272	1,285,241	1,573,817	Zacatecas	191,326	226,265	232,965

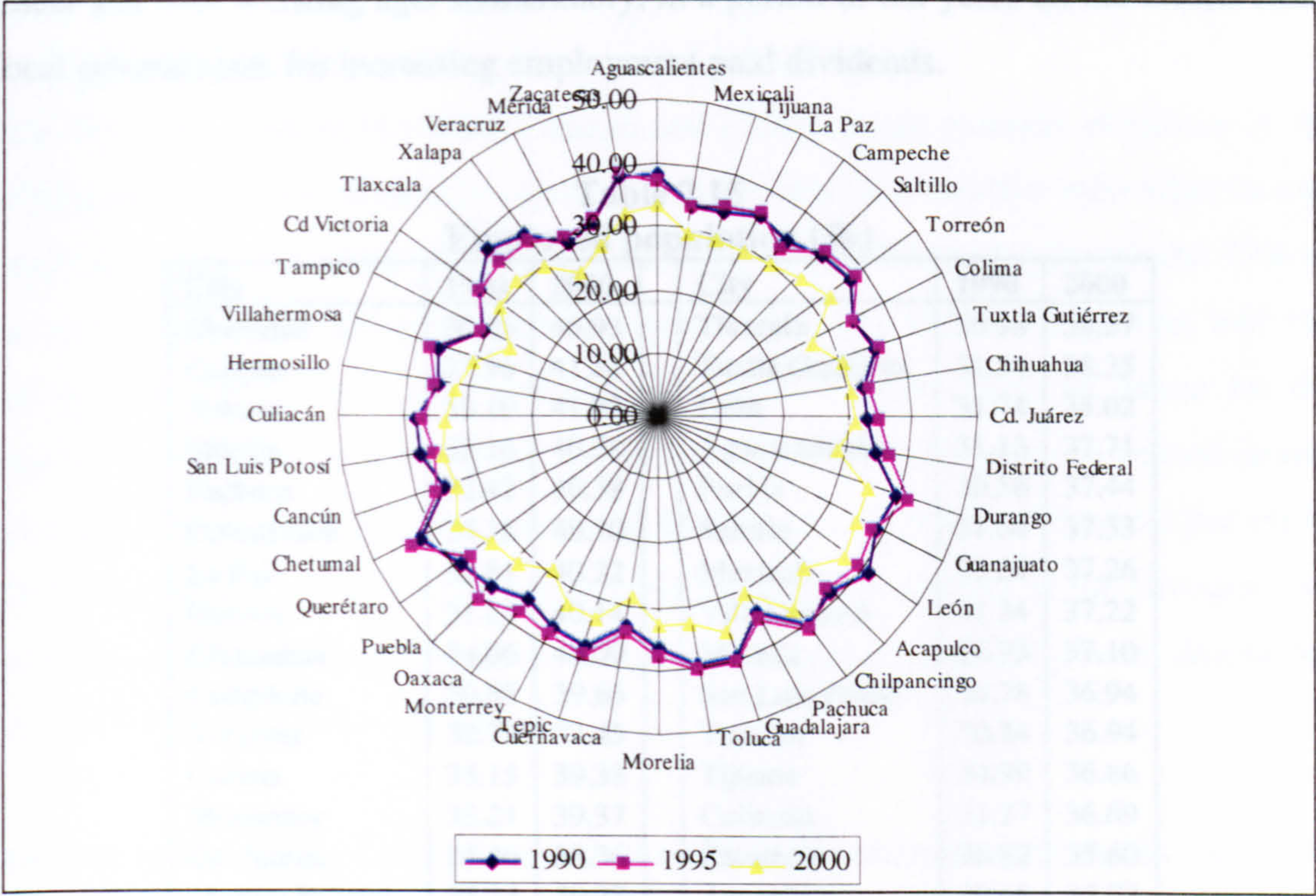
Source: Censos de poblacion y vivienda, 1990 and 2000 and Conteo de Poblacion, 1995.

Companies need workers with specific characteristics so that production can take place. Large cities have more people but not necessarily more workers available. Tight labour markets reduce city attractiveness due to higher salaries and difficulty for business to obtain adequate personnel. Places with unemployment problems become attractive locations due to the assumption that workers will be willing to take lower salaries to get a job. In reality, population is not the same as “workers”.

Young populations represent both opportunities and threats for economic development. In the first case, companies can take advantage of young worker’s flexibility to learn new tasks and indeed of their energy to do heavy work. The threats arise from the lack of formal education and proper training and thus business are forced to afford these extra costs.



**Graph 7.4**  
**Percentage of population under the age of 16**



Source: Elaborate with data from Censos de poblacion y vivienda, 1990 and 2000 and Conteo de Poblacion, 1995.

The graph illustrates how populations become older and how they are in comparison with other cities. It is evident that all cities in the sample have less young population for the year 2000 as a natural consequence of the national policy to reduce the birth rate. It can be also observed how the averages for the three years do not have drastic variations, what is more, the pattern looks uniform in the three periods.

Data for 1995 in the graph illustrate the effects of the 1995 economic crisis. It can be seen that some cities instead of maintaining the decreasing trend, suddenly they had more young population. Theoretically, it can be explained in terms of immigration from rural areas to the cities or from immigration from small towns to large cities. In 2000, after the economic recovery the trend moved backwards and the cities in the sample have again few young people.



The table below presents the percentage of employed population, including those under and over working age. Remarkably, in a period of ten years all the efforts from local governments for increasing employment paid dividends.

**Table 7.15**  
**Employed population (%)**

City	1990	2000	City	1990	2000
Chetumal	30.05	46.93	Tlaxcala	30.98	38.37
Cancún	37.96	41.51	Tuxtla Gutiérrez	31.54	38.35
Xalapa	33.10	41.02	León	31.74	38.02
Mérida	33.16	40.58	Aguascalientes	31.13	37.71
Pachuca	32.42	40.38	Puebla	30.56	37.44
Cuernavaca	34.15	40.30	Saltillo	31.04	37.33
La Paz	32.81	40.22	Mexicali	33.24	37.26
Oaxaca	31.24	40.14	Villahermosa	31.34	37.22
Chihuahua	34.06	40.09	Morelia	28.75	37.10
Campeche	30.85	39.66	San Luis Potosí	30.78	36.94
Veracruz	32.79	39.45	Torreón	30.24	36.94
Colima	33.15	39.38	Tijuana	34.99	36.86
Monterrey	33.21	39.37	Culiacán	31.27	36.69
Cd. Juárez	35.46	39.36	Zacatecas	28.82	35.60
Distrito Federal	33.33	39.27	Acapulco	30.68	35.09
Tampico	31.36	38.82	Chilpancingo	26.67	34.72
Querétaro	30.66	38.73	Toluca	29.62	34.42
Tepic	30.48	38.55	Guanajuato	28.07	34.08
Hermosillo	32.71	38.53	Durango	28.64	34.03
Cd Victoria	31.18	38.45	Guadalajara	23.79	31.32

Source: Censos de poblacion y vivienda, 1990 and 2000 and Conteo de Poblacion, 1995.

Note: Percentage based on the total population.

However, some precautionary observations must be made. On one hand, more people working not necessarily mean more gross income for families. The incorporation of women to the labour market as well as a growing number of single-parents homes has contributed to a bigger demand for jobs. On the other hand, there has been a lost of purchasing power in salaries due the economic crisis of 1994-1996 with interest rates that rose to 96% in April 1995, and an inflation rate above 59%. Families with only one income were forced to look for a second income in order to keep the same economic level.

Big cities were struggling to sustain their employment levels in 2000. The last table seems to suggest that while in 1990 medium and small towns were performing below the average, big cities were above it. This trend reverted ten years later and it is now possible to observe cities as Guadalajara and Toluca (both with more than one million



inhabitants) being unable to maintain their pace with their population's demand for jobs.

The first two places in the table, Cancun and Chetumal are extreme situations of the effects of availability of human capital if data are analysed together with other factors such as income per capita and top earners. Even though Chetumal has almost 50% of its population in the active labour force, salaries are very low in comparison with the other cities (2<sup>nd</sup> lowest). This seems to be due to a large supply of labour for the requirements of the local economy. In comparison, Cancun has also the second largest average of working population with a big difference in salaries and income per capita (1<sup>st</sup> of the country). It has to be pointed out that Cancun has one of the strongest and growing economies within Mexico, with a continuous demand for labour, decreasing in this way the pressure over salaries.

Human capital and knowledge are linked and together they generate technology to be applied in productive processes. Knowledge generation is certainly something exclusive of the labour force and no other factor has the attribution to create it. Universities thereby take the role of knowledge centres where human capital is "shaped" and trained to accomplish determined goals within the economy. Lever (2002, p.20) presents a table where the number of students in higher education (postgraduate) is used as a variable to measure the competitiveness of European cities in the knowledge-economy cities. Drawing upon this point the following table present the number of postgraduate students in cities.

**Table 7.16**  
**Number of postgraduate students**

City	1990	1995	2000	City	1990	1995	2000
Mexico city	24,380	26,215	27,788	Cd Victoria	96	358	488
Guadalajara	6,459	6,945	7,362	Veracruz	390	419	412
Monterrey	3,995	4,273	4,561	San Luis Potosí	334	359	381
Morelia	2,732	2,938	3,128	Mérida	341	367	376
Saltillo	2,471	2,657	2,816	Cd. Juárez	254	266	298
León	1,425	1,973	2,457	Tlaxcala	394	381	297
Torreón	1,853	1,993	2,313	Xalapa	259	278	295
Chihuahua	1,854	1,994	2,131	Villahermosa	250	269	285
Puebla	1,812	1,948	2,081	Tepic	183	197	210
Mexicali	15	2,001	1,964	Chilpancingo	170	183	198
Oaxaca	1,420	1,538	1,878	Culiacán	133	143	187
Pachuca	1,240	1,645	1,875	Durango	148	159	178
Aguascalientes	1,587	1,684	1,798	Tijuana	132	145	154
Toluca	1,434	1,549	1,642	Chetumal	69	75	142
Cuernavaca	1,178	1,246	1,321	Zacatecas	119	128	132
Guanajuato	1,151	1,238	1,312	La Paz	80	86	98
Tuxtla Gtz	1,138	1,224	1,297	Cancún	68	74	93
Querétaro	899	965	1,023	Colima	73	76	83
Tampico	422	464	512	Campeche	56	64	78
Hermosillo	429	461	499	Acapulco	44	46	50

Source: ANUIES, 1900, 1995, 2000.

The table shows the fluctuation between large and small cities, although the coastal cities such as Cancun, Acapulco, Campeche and La Paz do not have a representative number of postgraduates.

The high price of education at higher level and the lack of opportunities to use labour force's especial abilities in the local urban area deter governments to invest in postgraduate education. Since no jobs are available in the city, emigration is the only option for people with high skills. Currently, the debate is whether or not the central government must compensate those governments who traditionally "export" high skilled workers to other cities in other states. This is a very important issue with big implication in economic development. Those places providing education and not being able to keep these people in their area are loosing out their possibilities to improve their economic development level. Highly skilled people are potential top earners and thus the possibility to increase the tax collection for the local government is very low. At the same time, companies demanding high educated people will not be attracted to the city due to the absence of the main asset: skilled people.



Having checked the data regarding human capital, again there is a reconfirmation of the discrepancies amongst Mexican cities in the factor human capital.

### **Labour atmosphere**

Human capital operates under certain labour conditions influencing the total output and the quality of the product and service given to the customer. Union activity takes a key role in the attraction of business and the promotion of places as “paradises” for investment in those with low or nil union activity.

Work conflicts, threats for union action (or calls for strikes) and the total strikes are considered good variables to assess the conflict level in a particular location. Intuitively, the lower the better is the desired parameter since investors would not consider the labour force as a source of disturbance for the normal operation of the business.

Labour atmosphere also explains why some cities, although small and even lacking of raw materials or experts in the field, lure companies to their territories. Cities vie not only for direct investment but also for educated people with flexible skills to adapt to the changing conditions. This contention has been used to portray the competitiveness arena in the 21<sup>st</sup> century. However it is short of explaining the impact of a pacific labour force willing to work and adapt, instead of places committed to mass production with no desire for change whatsoever. Cities having such characteristic have an intrinsic competitive advantage over those with a more “rigid” production tradition.

To assess the Mexican labour atmosphere, two variables provide good insight into the current status: work conflicts and industrial action (strikes). The first table presents the work conflicts in relation to the population.

The Mexican Ministry of Labour defines “work conflict” as all those arguments between employees’ organisations and their bosses filed into the civil or penal court of law. Any conflict dealing with salary negotiations, social and company benefits, reductions or increments in working time, to mention but a few are included within the definition.

**Table 7.17**  
**Work conflicts / 100,000 inhabitants**

City	1998	1999	2000	City	1998	1999	2000
Aguascalientes	114	94	118	Morelia	102	106	103
Mexicali	92	85	85	Cuernavaca	406	354	444
Tijuana	261	288	352	Tepic	95	82	73
La Paz	70	71	91	Monterrey	286	318	323
Campeche	93	36	121	Oaxaca	139	165	149
Saltillo	162	144	185	Puebla	162	181	192
Torreón	176	175	216	Querétaro	246	265	322
Colima	86	94	99	Chetumal	101	99	69
Tuxtla Gutiérrez	112	94	77	Cancún	273	277	339
Chihuahua	330	324	403	San Luis	141	161	164
Cd. Juárez	235	270	269	Culiacán	97	94	99
Distrito Federal	184	190	174	Hermosillo	138	188	145
Durango	97	103	106	Villahermosa	294	292	258
Guanajuato	75	56	76	Tampico	180	163	158
León	279	269	302	Cd Victoria	177	161	153
Acapulco	259	274	270	Tlaxcala	78	69	95
Chilpancingo	81	153	133	Xalapa	104	114	110
Pachuca	82	73	71	Veracruz	168	169	195
Guadalajara	90	90	92	Mérida	176	193	212
Toluca	48	55	56	Zacatecas	143	126	149
<b>Average</b>	<b>161</b>	<b>163</b>	<b>176</b>				

Source: anuarios estadísticos de los estados, 1998, 1999 and 2000.

The conflict's table is biased by what it could be called "economic base-size". In spite of the variable being relative to population, it is clear that larger economies are more prone to conflicts. Big cities enjoy the benefit of more economic activity but at the same time they have some sort of negative economies of scale in terms of work problems. Due to the attraction exerted in people from other places, businesses in large cities suffer from intercultural shocks (different ways of doing and name activities), disillusion and motivation in the labour force when expectations are not achieved, different sets of rules even within the same city, local policies and support for enterprises. All these factors causes friction with employees and thus the chances of moving the dispute to the court of law is greater than in small cities.

With the previous argument, it is possible to explain somehow why some companies are relocating in smaller cities. The costs of lawsuits and compensations paid to workers represent extra costs not considered in the original location assessment. Obviously, this decreases competitiveness and attractiveness for cities. Usually they are labelled by businessmen as "war zones" and investment tends to erode with the



resulting drawback such as stagnated local economy, unemployment, the fall in quality of life and thereby in the economic development levels.

A more accurate variable seems to be the ratio work conflicts/call for strike. The cointegration of these two variables does not present any obvious bias. Integrating the variable “call for strike” decreases the economy-size effect so that the indicator can portray without excessive distortion the conflict level of Mexican cities. In this way, the efforts made by cities to achieve low conflict level seem to emerge and correlate with other variables presented throughout the current chapter. For instance, Tijuana and Ciudad Juarez appear with low values (no conflict at all would be equal to Zero), which means that just a few cases are really threatening the work atmosphere.

**Table 7.18**  
**Work conflicts/call for strike**

City	1998	1999	2000	City	1998	1999	2000
Aguascalientes	8.88	12.12	7.74	Morelia	8.44	10.34	2.16
Mexicali	3.87	4.10	4.88	Cuernavaca	4.62	3.19	6.00
Tijuana	2.17	1.87	1.75	Tepic	2.86	1.56	4.15
La Paz	2.32	2.39	3.45	Monterrey	1.53	2.97	2.97
Campeche	14.36	4.59	9.61	Oaxaca	2.23	3.15	2.45
<b>Saltillo</b>	<b>79.08</b>	<b>44.81</b>	<b>177.29</b>	Puebla	3.38	3.30	3.44
Torreón	5.91	6.72	8.68	Querétaro	8.59	9.16	9.69
Colima	4.86	4.50	5.00	Chetumal	2.53	2.03	0.51
Tuxtla Gutiérrez	38.85	20.90	22.06	Cancún	25.54	2.27	20.16
<b>Chihuahua</b>	<b>68.39</b>	<b>126.72</b>	<b>70.93</b>	San Luis Potosí	9.97	12.89	12.55
Cd. Juárez	112.52	611.80	1.00	Culiacán	12.56	14.98	13.19
Distrito Federal	3.76	4.22	5.99	Hermosillo	1.00	1.49	1.43
Durango	2.50	1.69	1.95	Villahermosa	5.00	15.05	13.99
Guanajuato	12.88	7.80	15.29	<b>Tampico</b>	<b>51.25</b>	<b>29.96</b>	<b>66.00</b>
<b>León</b>	<b>13.44</b>	<b>19.53</b>	<b>47.88</b>	Cd Victoria	5.05	4.87	4.40
Acapulco	3.31	3.74	3.58	Tlaxcala	7.00	4.64	5.14
Chilpancingo	9.12	15.10	19.43	Xalapa	1.50	1.97	1.50
Pachuca	1.03	0.95	1.11	Veracruz	1.01	0.98	1.03
Guadalajara	0.81	0.86	0.78	Mérida	15.78	14.54	14.58
Toluca	0.76	0.60	2.14	<b>Zacatecas</b>	<b>61.67</b>	<b>83.00</b>	<b>201.00</b>
<b>Average</b>	<b>16</b>	<b>28</b>	<b>20</b>				

Source: Anuarios estadísticos de los estados, 1998, 1999 and 2000.

Tijuana, Ciudad Juarez and Guadalajara have very low indexes being industrialised cities with much economic activity also in services and trade. Guadalajara, the second largest city in Mexico, has a reputation as “stable” place for investment due to the lack of problems derived from the labour force and political stability without social

problems. Besides, Tijuana and Ciudad Juarez are border cities with plenty of international companies (mainly international investment from USA and Japan) and as it could be appreciated, their indicator is extremely low.

Negative performers are Saltillo, Chihuahua, Leon, Tampico and Zacatecas. Nonetheless the case of Saltillo stands aside for the large proportion of the automobile industry located in here. 52% of its local economic activity is directly or indirectly associated to this single industry, well known for the profit crisis faced in recent years all over the world. Zacatecas stands alone as the worst city but it must be pointed out its small manufacturing and service base, where the main economic activity and the largest employer is the government, local and state.

### **Quality of life**

For local authorities, improving the quality of life conditions through the provision of public services is an obligation. In recent years governments at regional and local level, have shifted their strategies from the construction of civil works to the “provision” of quality of life factors. In the last category the notion of sustainability is included and becomes the main guideline for decisions.

In the Mexican context, some cities have changed their strategies to improve living conditions after years and years of industrial expansion, even shutting down companies responsible for water and air pollution. Also, quite a few cities have invested in quality of life factors (more policemen, patrols, public hospitals, green areas and parks, public housing) in order to become more attractive to private investors.

The impact of enhancing the quality of life in cities is one of the best indicators of economic development at urban level. Not necessarily higher salaries imply “automatically” better living conditions. Surrounding factors can deter people not to live in one place even though salaries are attractive.

Being that Mexico is a developing country, it could be expected to see differences in quality of life indicators among cities. The important point is to assess if they are of large magnitude to impede economic growth. In this section two sub-factors will be



covered: security and housing and living conditions due to their impact on the competitiveness and attractiveness.

In the context of housing and living conditions, it could be expected (according to the hypothesis) that the cities would have indicators, with few variations, proving that there are not large dissimilarities. The first indicator points out to another reality where contrast is the common denominator.

**Table 7.19**  
**Houses without potable water, %**

City	1990	1995	2000	City	1990	1995	2000
Aguascalientes	2.82	1.87	0.78	Morelia	6.12	4.67	3.92
Mexicali	8.20	7.26	2.79	Cuernavaca	5.17	2.46	3.06
<i>Tijuana</i>	<i>28.59</i>	<i>21.13</i>	<i>7.49</i>	Tepic	7.99	4.68	2.28
La Paz	7.24	4.15	5.59	Monterrey	4.90	2.94	3.93
Campeche	9.14	8.16	3.11	Oaxaca	12.71	10.97	8.50
Saltillo	5.10	3.16	2.26	Puebla	<b>26.58</b>	<b>21.67</b>	<b>15.05</b>
Torreón	6.25	6.34	0.79	Querétaro	4.90	2.64	2.17
Colima	3.39	2.19	1.06	Chetumal	9.43	4.67	2.72
Tuxtla Gutiérrez	<b>15.12</b>	<b>13.49</b>	<b>15.04</b>	Cancún	4.42	2.15	1.70
Chihuahua	5.58	3.46	0.80	San Luis Potosí	3.70	2.14	1.53
Cd. Juárez	5.78	2.78	3.50	Culiacán	12.68	11.34	3.87
Distrito Federal	8.11	6.49	3.15	Hermosillo	4.91	2.97	1.79
Durango	4.84	3.46	1.83	Villahermosa	<i>17.36</i>	<i>12.46</i>	<i>6.97</i>
Guanajuato	<i>15.92</i>	<i>11.87</i>	<i>8.63</i>	Tampico	7.71	3.24	0.43
León	8.10	6.78	4.94	Cd Victoria	13.27	9.64	3.70
Acapulco	<b>27.72</b>	<b>21.19</b>	<b>18.60</b>	Tlaxcala	3.80	2.64	0.90
Chilpancingo	<b>14.92</b>	<b>10.26</b>	<b>11.89</b>	Xalapa	<i>16.72</i>	<i>13.84</i>	<i>2.46</i>
Pachuca	4.64	2.64	1.11	Veracruz	16.41	12.49	4.59
Guadalajara	<i>19.29</i>	<i>13.85</i>	<i>7.25</i>	Mérida	<i>18.32</i>	<i>13.91</i>	<i>2.52</i>
Toluca	<i>15.32</i>	<i>11.49</i>	<i>6.16</i>	Zacatecas	4.96	3.11	2.82

Source: Censo general de poblacion y vivienda, 1990, 2000 and Conteo de poblacion 1995.

This table provides two interesting perspectives for analysis, the first one is to compare all cities against each other and in the second one the progression of each city over time.

The results indicate that while some local authorities manage to cover almost the entire population (Aguascalientes, Torreon, Chihuahua, Tampico and Tlaxcala), others are just in unacceptable levels beyond the 10% threshold (Tuxtla Gutierrez, Acapulco, Chilpancingo, and Puebla).

In this case, there is no regional pattern identifiable since good and bad performers are located all over the country, with a slight proportion of cities located in the central part. Cities lacking potable water infrastructure have fewer possibilities to grow economically due to the fact that companies look for places where at least the basic living conditions are covered.

Along the analysis, some cities have become traditionally "bad" and "good" performers. In the first category are Chilpancingo, Acapulco and Tuxtla Gutierrez which have high percentages of houses without potable water in comparison with the rest of the sample. However Xalapa, a poor performer city made good progress diminishing the percentage from 16.72 to 2.46%, suggesting that the improvement of this factor depends on the local government's intention to tackle the problem rather than on external actions.

In the last ten years, quite a few cities have seen a marked progress towards the improvement of the supply of potable water. Tijuana has today "only" 7.49% of households without this basic public service, while in 1990 it was 28.59%.

Megalopolises such as Guadalajara and Toluca, with a population in excess of two million people have also seen massive improvements in the supply of the service, covering more and more households.

Water supply and electricity are the basic services for the day to day operation of any household and no analysis would be complete without including an indicator to measure the supply of this public service.

Thus, the inclusion of table 20 contributes to complement the analysis in a deeper way, also offering possibilities to combine variables for analysis.



**Table 7.20**  
**Households without electricity**

City	1990	1995	2000	City	1990	1995	2000
Aguascalientes	3.49	2.34	1.05	Morelia	3.28	2.28	0.96
Mexicali	3.42	2.67	1.09	Cuernavaca	1.61	1.19	0.67
Tijuana	14.24	11.27	1.97	Tepic	3.40	2.46	1.30
La Paz	7.35	6.46	3.91	Monterrey	4.97	3.97	1.13
Campeche	5.53	3.81	3.41	Oaxaca	2.10	1.98	1.84
Saltillo	3.44	2.31	1.00	Puebla	2.72	1.93	0.79
Torreón	4.32	4.11	1.15	Querétaro	3.39	3.16	1.59
Colima	3.36	2.64	1.03	Chetumal	12.40	11.12	5.59
Tuxtla Gutiérrez	3.19	2.91	1.65	Cancún	18.24	13.64	1.16
Chihuahua	3.55	2.34	0.88	San Luis Potosí	5.20	4.67	1.96
Cd. Juárez	4.44	4.13	0.93	Culiacán	4.77	2.69	1.65
Distrito Federal	2.16	1.91	0.44	Hermosillo	6.11	4.58	1.83
Durango	4.79	2.34	1.71	Villahermosa	4.82	3.57	1.65
Guanajuato	11.00	9.16	3.23	Tampico	4.43	3.61	1.75
León	6.06	4.37	1.14	Cd Victoria	9.31	8.79	3.31
Acapulco	8.11	6.73	1.25	Tlaxcala	3.28	2.89	0.97
Chilpancingo	8.25	6.93	2.59	Xalapa	13.90	10.49	1.38
Pachuca	3.14	2.11	0.95	Veracruz	6.31	4.63	1.03
Guadalajara	5.16	4.37	0.61	Mérida	4.24	2.36	1.49
Toluca	5.30	4.39	1.27	Zacatecas	3.88	2.39	1.09

Source: Censo general de población y vivienda, 1990, 2000 and Conteo de población 1995.

In 2000, the average percentage for this indicator was 1.61 with most of the cities around the value. Tijuana highlights in its progress from 1990 to 2000, providing evidence of the local government's effort to increase quality of life conditions. The explosive population growth of Cancun at the outset of the last decade was not accompanied by a growth in the same proportion of the supply of public services (electricity, potable water, and sanitary services). The table above suggests that the government caught up with the population growth rate almost ten years later.

Contrasting with results given in the case of potable water supply, Chilpancingo and Acalpulco perform around the average without a noticeable variation in comparison with the other cities. Xalapa reduced a deficit from 13.90 % to just 1.38%.

Table 7.20 portrays a more evenly distributed scenario where cities have more or less the same living conditions (as stated in hypothesis 1). This implies that the intervention of local governments in particular issues makes the difference to reduce unevenness.

There is an issue to remark when comparing the supply of both services. Firstly, the supply of potable water relies on local authorities that are responsible for the whole provision and operation; each urban area has a public company managed by the local government. Secondly, the supply of electricity is by a state company, managed by the central government. Two conclusions can be drawn upon this information:

1. The central government can react faster to new population settlements.
2. Different local governments have different priorities that do not necessarily emphasise quality of life factors.

How safe is a place determines the quality of life standards. In other words, cities have indicators about illegal activities like assassinations, robberies, drug selling and consumption, kidnapping, home break-ins, and so on. City size is linked to violence on the streets and other sources of social unrest as well as poverty, social exclusion or ethnic segregation. To attract investment, cities must provide an image of security not just for the investment but also for the people working and living in there.

The social and economic contexts in which Mexican cities are immerse impact on their “safety levels”. Therefore Mexico City with around 20 million inhabitants is expected to have more crime than any other place due to the impossibility by the local authority to cover all areas day and night. Besides, in such a metropolis illegal activities tend to flourish thanks to the large number of places to hide.

**Table 7.21 Cities with the highest crime rate  
(Crimes registered by day)**

City	1998	City	1999	City	2000
Mexico City	969.56	Mexico City	954.87	Mexico City	822.35
Guadalajara	155.15	Monterrey	163.75	Tijuana	635.13
Zacatecas	153.11	Guadalajara	149.07	Monterrey	171.85
Monterrey	128.51	Tijuana	112.33	Guadalajara	158.09
Mérida	117.13	Mérida	108.42	Cd. Juárez	101.59
Tijuana	113.52	Tampico	90.20	Mérida	99.87
Tampico	101.83	Puebla	84.25	Puebla	94.18
Cd. Juárez	86.20	Toluca	81.41	Tampico	89.01
Puebla	85.22	Cd. Juárez	75.94	Toluca	86.84
Toluca	76.82	Zacatecas	71.00	San Luis	80.99

Source: Anuarios estadísticos de los estados, 1998, 1999 and 2000.

The indicator provides confirmation of the bond between city size and crime rates. Nonetheless, Tijuana, a border city and internationally famous due to the presence of



criminal organisations from all over the world, has moved up 5 positions to become the second city with more crime in Mexico. With the exception of San Luis, being listed until 2000, the rest of the cities are the same, putting on evidence how difficult is to tackle this problem. Also noticeable are the differences amongst the last ten worse places.

Not surprisingly, these cities are also the places with the strongest economies within the Mexican territory, therefore they are attractive for illegal activities. Having exposed the cities with high criminal rates, it is also important to mention those with almost no criminal activity.

**Table 7.22**  
**Cities with the lowest crime rate**  
**(Crimes registered by day)**

City	1998		City	1999		City	2000
Torreón	15.87		Pachuca	16.90		Pachuca	15.97
Colima	14.84		Saltillo	16.47		Torreón	15.40
Saltillo	11.64		Torreón	14.28		Saltillo	13.59
Cd Victoria	10.87		Chetumal	10.16		Cd Victoria	12.90
Campeche	10.82		Chilpancingo	7.91		Chetumal	10.92
Chetumal	10.68		Tepic	7.42		Chilpancingo	9.45
Tepic	9.48		Campeche	7.36		Colima	6.08
Tlaxcala	7.10		Colima	6.55		Campeche	5.72
Chilpancingo	6.74		Tlaxcala	5.29		Tlaxcala	5.54
Guanajuato	4.41		Guanajuato	3.75		Guanajuato	4.75

Source: Anuarios estadísticos de los estados, 1998, 1999 and 2000.

Without a deep analysis it can be appreciated the peculiarities of medium size cities. First of all, the smallest cities have the lowest crime rates but also are the poorest and the cynical argument could be that there is not too much to steal or to sell due to the lack of economic resources in the population.

This pattern repeats itself for other indicators such as homicides and robbery as the following table can confirm it. Unfortunately, economic development is not exempt from diseconomies of scale. Poor cities have neither crime nor options for increasing living standards. On the contrary, rich cities become attractive for people and crime at the same time and due to their growth rate, local authorities cannot react at the same pace to protect their populations, losing their economic gains in some cases.

**Table 7.23**  
**Crime, robbery and homicide indicators, 2000**

	Diary crime rate	Robbery, total	Homicides, total
Mexico City	822.35	163 976	4 768
Tijuana	635.13	14 385	2 681
Querétaro	67.98	4 944	2 637
Guadalajara	158.09	25 635	1 879
Toluca	86.84	10 330	957
Acapulco	44.30	6 348	606
Puebla	94.18	12 669	561
Oaxaca	41.88	3 326	462
Cd. Juárez	101.59	13 741	385
Culiacán	17.65	3 445	358
-			
-			
Tepic	16.34	2 079	78
Zacatecas	64	73	71
Chetumal	10.92	1 716	64
Campeche	5.72	498	48
Saltillo	13.59	683	46
Cd Victoria	12.90	1 650	43
Colima	6.08	1 381	41
Morelia	22.95	3 468	33
La Paz	19.24	2 687	23
Guanajuato	4.75	586	19

Source: Anuarios estadísticos de los estados, 1998, 1999 and 2000.

This argument can be concluded as follows:

1. Cities with high crime rates are at the same time, prosperous and highly populated. As the data pointed out, they have growth and development in some factors.
2. The cost of economic and income growth has been a rising on crime and violence.
3. The benefits of economic growth induce economic development but with a social cost.
4. Thus, economic conditions improve but not entirely the quality of life in the overall picture.
5. Small and medium size cities have low crime rates, they tend to be safe places, but poor and in some cases isolated from important trade centres.
6. The divergence between “dangerous” and “safe” cities seems to be attributable to the size of their economy.



### 7.3 Concluding remarks

This section has presented the expected findings of vast asymmetries among the cities in the selected sample. Competitiveness and attractiveness variables served as a good framework to assess as to what extent these differences may affect the chances of the “poor” cities to achieve some improvement in their living standards of their citizens.

The data suggest that the poor cities are poor in all variables analysed, with very few exceptions in a couple of variables. Nonetheless, the rich cities have increased their advantage over time increasing the gap with respect to others. The size of the city seems also to matter for achieving a higher growth and development level, as according to the literature, although it is possible to see that the megalopolises are losing both population and businesses.

To sum up, it is now possible to provide an answer to the first research question “are there any economic asymmetries among the Mexican cities selected in the sample”? The answer is yes, the gap is increasing with the middle-table performers showing a positive trend toward improvement. This suggests that the country in general is better off but with some cities not obtaining any opportunities to enhance their current economic performance. Unfortunately, there is no conclusive evidence about who has to be responsible for this lack of pace: the central government or the regional and central governments, the former due to its lack of policies to create a system to redistribute resources properly. Regional and municipal governments seem incapable of attracting more companies or to design strategies to increase the economic activities of their territories.

# Chapter 8

## Competitiveness and attractiveness: Factors to measure urban economic development

### 8.1 Preamble

This section continues with the empirical analysis and now assesses the impact of city attractiveness and competitiveness by using ranking, proving that they are capable of showing more information than simple positions, lacking of any connection to relevant theories of economic growth and development.

Bringing together both competitiveness and attractiveness is possible to create a dynamic method to evaluate how developed is a city and what its chances are to achieve better economic conditions in the long term without leaving aside the possible improvements of the other competitors.

Finally, the chapter presents two models in order to portray the economic development function using the set of variables presented in chapter 6. The first one is created using a panel data regression equation, while the second one is an attempt to create a model with as many variables as possible to provide a reference to policy-makers to simulate the impacts of their strategies on their cities.

### 8.2 Competitiveness and attractiveness results, the search for economic development

Having analysed the economic dissimilarities among the cities selected in the sample, it is now pertinent to assess the impact of both competitiveness and attractiveness at urban level on the economic development process of cities. To do so, it is necessary to study the performance of cities in terms of their competitiveness and attractiveness.



To carry out the analysis and obtain the classifications, I have applied the same methodology as in Serrano (2000)<sup>1</sup>.

Looking at the information presented in the following figures, it is possible to determine whether or not economic development is influenced by factors associated to competitiveness and attractiveness. Firstly, I present the rankings to discuss briefly the dynamics of cities in them from 1990 to 2000 assessing the ups and downs that may appear. Secondly, a set of tables are analysed, linking together competitiveness and attractiveness to look up for causes leading to the explanation of the asymmetries in the economic development level of cities. Therefore, a conclusion about the impact of both concepts can be obtained.

### **8.2.1 The attractiveness rankings**

Ranking the cities according to their attractiveness level helps understand the kind of strategy followed by local authorities to pull in inward investment. As it was stated in previous chapters, usually attractive places have focused their efforts on factors that can be influenced through their governments. Therefore, factors such promotion of the place, the provision of infrastructure, business climate and market conditions are subject to constant transformation in order to lure in investors and highly skilled people to achieve the goal of developing the place in relation to its economic conditions.

A constant in the ranking is the low dynamics in relation to cities' movements upward and downward in the first and last ten places. However it is not possible to neglect some minor changes in the positions with a few cities decreasing constantly their position in the last 10 years like for instance Cuernavaca, Cd. Juarez and Leon. Also noticeable is how the first ten places on average are the same 1990 and 2000, with two exceptions (Cd. Juarez and Cuernavaca). It could suggest that these cities already have a specific advantage over the rest of the competitors, which is clearly perceived by the investors and businesses wanting to expand.

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<sup>1</sup> It is important to note that the number of variables used by Serrano (2000) were 74, while for this classification only 68, this was due to the lack of data for the periods of reference. For a complete explanation of the methodology see the appropriate reference.

**Table 8.1 Ranking of attractiveness**

City	Positions			Average position
	1990	1995	2000	
Queretaro	1	6	1	3
Hermosillo	2	3	15	7
Cd. Juarez	3	19	18	13
Cancun	4	4	5	4
Tijuana	5	2	2	3
Chihuahua	6	9	3	6
Monterrey	7	5	13	8
Mexicali	8	11	7	9
Cuernavaca	9	31	16	19
Colima	10	1	6	6
Leon	11	34	33	26
Puebla	12	25	30	22
Villahermosa	13	8	12	11
Tampico	14	26	11	17
Guadalajara	15	21	31	22
Toluca	16	22	26	21
Veracruz	17	14	8	13
Mexico City	18	30	27	25
Morelia	19	18	23	20
Saltillo	20	13	4	12
Tepic	21	15	20	19
Aguascalientes	22	12	9	14
Merida	23	10	29	21
Pachuca	24	33	22	26
San Luis	25	16	17	19
La Paz	26	24	21	24
Guanajuato	27	28	35	30
Tlaxcala	28	35	24	29
Xalapa	29	29	28	29
Culiacan	30	20	19	23
Tuxtla Gtz	31	40	38	36
Torreon	32	7	14	18
Oaxaca	33	38	37	36
Durango	34	17	32	28
Cd. Victoria	35	36	25	32
Zacatecas	36	27	10	24
Campeche	37	32	36	35
Chilpancingo	38	23	34	32
Acapulco	39	39	39	39
Chetumal	40	37	40	39

1995 is characterised by a high dynamism in the first 20 positions with upward and downward movements in some cases of more than 10 position either direction. It must be remembered how Mexico faced an economic crisis of international magnitude (called the “tequila effect”). Mainly central cities were the most damaged due to their



high trade integration with Mexico city, while cities in or close to the border with the USA did not suffer the crisis with the same intensity due to their ability to sell products in the other “side” and consequently bring across dollars, not to mention how overnight these cities become more attractive for American investment since prices were cut more than a half due to the currency devaluation. The exemption is Cd. Juarez but its loss of attractiveness could be attributable to other problems such as violence and crime or its diseconomies of scale due to an excessive agglomeration of American and Japanese electronic companies, to mention but a few possible explanations.

Torreon appears to be a winner with its improved position, coming from the 32<sup>nd</sup> to 14<sup>th</sup> place as well as Saltillo from 20<sup>th</sup> to 4<sup>th</sup> place. Both cities belong to the same regional government giving evidence of the effectiveness of the regional strategies. Hermosillo did perform very badly falling quite a few positions with respect to 1990 and 1995. There is not specific cause to explain objectively this problem.

In the lower part of the table the low performers seem to lack of any dynamism, if any. Only Zacatecas moved upwardly, gaining 16 positions, while the rest moved only two or three places at the most in either direction.

It must be pointed out that any effort to rank cities according to their economic performance has somehow an inherent risk of not reflecting about the efforts of local governments to improve their current situation. Thus, local governments of cities ranked at the bottom of the table could appear as places “doing nothing”, however this is not necessarily true due to the fact that other places would be implementing strategies to improve constantly their current conditions. On the other hand, it is possible that their strategies could be concentrated on elements either not considered in this analysis or with a very low impact in the short term to be captured.

The cities of Acapulco, Tuxtla Gtz, Chetumal and Campeche were constantly the worse performers in the sample. The four cities have in common a lack of an industrial base and they are medium size cities. Chetumal and Campeche are located in the Yucatan Peninsula while Acapulco and Tuxtla Gtz are located in the South Pacific region.

A continuous increasing deterioration in their ranking position with respect to the previous ranking can be appreciated in the cities of Guanajuato, Leon, Puebla, Guadalajara, Toluca and into some extent Oaxaca. They have been moving down the rankings. These six cities can be grouped in two categories: megalopolises (Puebla, Guadalajara, Toluca) and medium size cities (Guanajuato, Leon, Oaxaca).

The first group could be losing its attractiveness due to its excessive air pollution, heavy traffic, long distances, and lack of accommodation and in general all the externalities associated to big cities. The second group is losing its “grip” mainly due to the incapacity to really expand the economic base of these places characterised by low level of economic growth in the last 15 years. In the case of the megalopolises it is understandable that local governments prefer to focus their strategies in targeting specific investment projects, while the other group of cities would be targeting any kind of investment, producing a negative image among the investors. Yet, this lack of scope leads to incomplete industrial clusters and its consequent agglomeration economies, perhaps a good reason for investors to move to other locations.

In the overall picture, attractive cities seem to be those with a medium size and located close to the USA border. There is also some evidence about the lost of attractiveness by large cities and those with a very incipient economic activity, preponderantly where the mayor employer is the government. The very low attractive places in the ranking (from position 30 downwards) have remained without significant change in the last ten years. The fight for attractiveness seems to be in the middle of the ranking from positions 10 to 25, mostly cities close to Mexico City. This fact reflects how local authorities are designing and implementing attractiveness strategies to lure in companies searching for a new location. It is possible to say that the first places in the ranking have secured their preponderant position in relation to their attractiveness indicators and in some way in the eyes of the investors.

### **8.2.2 The competitiveness rankings**

Rankings of competitiveness are a very common tool to assess city or regional economic performance according to a widely accepted set of indicators. Competition automatically implies ranking, but rankings do not imply anything else. There is close

bond between competitiveness and economic development. In a few words, urban competitiveness represents a good alternative to find the reasons about why some cities grow more than others. As it was stated for the case of the attractiveness rankings, the same methodology by Serrano (2000) was applied in order to undertake a standard procedure.

**Table 8.2**  
**Ranking of competitiveness**

City	Positions			Average position
	1990	1995	2000	
Monterrey	1	2	1	1
Guadalajara	2	1	3	2
Veracruz	3	6	7	5
Mexico City	4	3	2	3
Torreon	5	5	6	5
Puebla	6	4	16	9
Saltillo	7	24	10	14
Cd. Juarez	8	10	12	10
Mexicali	9	17	11	12
Tijuana	10	11	13	11
Chihuahua	11	8	8	9
Toluca	12	7	5	8
Cuernavaca	13	9	18	13
Queretaro	14	12	4	10
San Luis	15	31	24	23
Culiacan	16	23	17	19
Morelia	17	20	22	20
Hermosillo	18	19	21	19
Merida	19	15	14	16
Zacatecas	20	27	37	28
La Paz	21	18	19	19
Durango	22	24	25	24
Tepic	23	29	31	28
Colima	24	21	23	23
Aguascalientes	25	14	9	16
Leon	26	22	20	23
Cd. Victoria	27	26	29	27
Guanajuato	28	28	35	30
Tampico	29	25	28	27
Villahermosa	30	13	26	23
Oaxaca	31	38	34	34
Acapulco	32	36	38	35
Cancun	33	30	15	26
Tuxtla Gtz	34	35	30	33
Xalapa	35	34	27	32
Chetumal	36	40	33	36
Campeche	37	32	39	36
Chilpancingo	38	39	38	38
Pachuca	39	37	32	36
Tlaxcala	40	33	36	36



On average the first fifteen places did not change but one, San Luis, which dropped 8 places. This fact reflects only one thing: the competitive level of the first places is not under threat and the strategies followed by their respective governments are paying off. In the case of the last ten places, only two were capable of improving: Villahermosa and Cancun. Although they move up a few positions it was nothing really significant. The middle section of the table shares the same characteristic, three cities having some significant movement.

As in the case of the ranking of attractiveness, the year 1995 reflects the effects of the economic crisis where some cities saw their competitive level decrease. Nevertheless, the movements were also in the middle of the table with no relevant change in positions either at the bottom or top part of the ranking.

Looking at the average positions of the sample of cities it is easy to observe the lack of dynamism. The causes can be attributable to quite a few reasons ranging from national policies unable to target the bad performers owing to a lack of political interest to change the current situation. A flash back in the information presented at the beginning of the on-going section and revising the variables contained in these ranking, it can be noticed that the variables associated with competitiveness have the particularity of not being manageable directly by local governments. Yet, the effects of some factors such as the development and accumulation of human capital need quite a long time to be reflected in indicators as also seem to be constant for all cities, in respect to the sample hereby selected. The construction of a motorway takes years to complete while the accumulation of technological resources and capabilities is a very long process.

City size does matter to maintain and increase the competitiveness level. The first ten places are always characterised by the big megalopolises plus the other big cities such as Puebla, and Toluca. Theoretically, large urban areas enjoy some especial conditions due to scale economies such as universities with large departments of research and development, airports, local markets with high purchase power not to mention the communication with international markets and the affluence of tourism.

Geographic location is also important for competitiveness. After the size condition, the geographic location of the cities determines into some extent the possibilities of success in the competitiveness arena. Cities close to the USA benefit from an extended market (the national plus the international) or those close to the big cities also have access to more opportunities. Even though the telecommunications industry has claimed that thanks to the new technology, distance does not matter anymore, in the case of the Mexican cities it is still important. The closer the better is the conclusion.

Some speculations about the reasons for a lack of dynamic forces to within the ranking of competitiveness could be endless, but some of them deserve attention. For example, the first 5 cities are governed by opposition political parties other than the PRI (Revolutionary Institutional Party), considered nowadays a declining party since it was defeated in the presidential elections in the year 2000, while the very last 7 positions are ruled by the PRI. Coincidence or a rooted problem? There is no evidence in both cases. The facts point towards a possible administrative style not suitable or suitable, depending on the perspective, for the modern era of global competition and local governments working with parameters of efficiency.

State capitals do not necessarily have a competitive edge. Three cities amongst the first ten are not capitals and however they perform well in the ranking. What is relevant to mention is that the first fifteen cities in the ranking have the manufacturing as their main economic activity. There is no possibility of drawing a conclusion over the last positions because there is a mix, some cities have as main employer the government, and others have tourism and personal services as their economic base.

It can be concluded that the competitiveness of some Mexican cities has reached a maturity level, with specific comparative and competitive advantages for each of them that it is extremely difficult to exchange positions. Economic crises tend to produce some changes but only in the middle sector of the ranking, while the top and the bottom remain constant and it is here where the real dissimilarities amongst the cities can be appreciated in all their extent.

The very competitive cities such as Monterrey, Guadalajara, Mexico City, Toluca, Torreon, will keep their competitiveness under any circumstances. They have developed such a gap in relation to the other cities that the other “competitors” have almost no chances to catch up with them. Even when adverse circumstances take over the national economy, these places have reserves (whatever they may be) to invest and retake their former positions as the ranking shows.

Finally, it is possible to confirm that competitiveness and attractiveness are able to provide answers about why some cities are more capable than others to provide the opportunities to generate wealth and ignite the economic development process or a better income distribution and quality of life for their inhabitants.

### **8.2.3 The impacts of city competition and investment attraction strategies: explaining economic development asymmetries**

It has been demonstrated how attractiveness and competitiveness impact on the economic performance of cities. Now it is necessary to find out the link between economic development and growth and city attractiveness and competitiveness to prove that both concepts together represent the economic development function of cities first at theoretical level and then in the next section at an econometric level.

The following three figures bind competitiveness and attractiveness factors and give a notion of where the cities stand not just in relation to the others but also regarding themselves to portray a clear perspective about growth and development.

The figures were created by dividing the rankings presented in the previous section into four categories: highly attractive or competitive, positions 1 to 10; high-medium, positions 11-20; Medium-low, positions 21-30; and low positions 31-40.

The figures should be read in two ways to obtain the complete picture of growth and development. Firstly, the obvious association between competitiveness and attractiveness directly. Secondly and most importantly, each quadrant (yellow, blue, pink and green sections) can be interpreted as an economic growth or development stage, according to the analysis. The best sector in the figure corresponds to the first



quadrant in the upper-left part, highly competitive and highly attractive and the worst is low competitive and low attractive at the bottom-right. The upper the better and the most further left the better too. Each colour represents an economic development position, as it will be explained in the following paragraphs.

Figure 8.1 presents the cities' positions for 1990. The sector highly attractive-highly competitive has four cities: Cd. Juarez, Tijuana, Mexicali and Monterrey. It is in this sector where most of the cities would like to be seen and indeed, local governments work to create the conditions to be very competitive and attractive. Nonetheless, the second sub-sector of this stage: highly competitive or attractive and high-medium competitive or attractive, has a strong economic development component and although the cities included in here are not at the "perfect" position they performed very remarkable in most of the indicators.

Figure 8.1 Competitiveness, attractiveness and development, 1990

	Highly Attractive	High-Medium Attractive	Medium-Low Attractive	Low Attractive
Highly Competitive	Cd. Juarez Tijuana Mexicali Monterrey	Puebla Veracruz Mexico City Saltillo Guadalajara		Torreon
High-Medium Competitive	Queretaro Hermosillo Cuernavaca Chihuahua	Toluca Morelia	Merida San Luis Culiacan	Zacatecas
Medium-Low Competitive	Colima	Leon Villahermosa Tampico	Tepic Aguascalientes La Paz Guanajuato	Durango Cd. Victoria
Low Competitive	Cancun		Pachuca Tlaxcala Xalapa	Tuxtla Gtz Oaxaca Campeche Chilpancingo Acapulco Chetumal



Evidently, these cities had a predominant position in the Mexican economy at the onset of the last decade. At that time large cities such as Guadalajara, Mexico City and Monterrey were good locations for direct investment. The cities of Cancun and Torreón are very interesting cases. In spite of having either highly competitive or attractive positions, they were in very low positions in attractiveness or competitiveness, according to the case. In spite of such extreme positions, these two cities along time performed extremely well and reached predominant economic positions in recent years.

All cities in this first quadrant have indeed a strong economy and thus a high economic development level.

The second sector (blue) can be considered as the second economic development stage (up-down) where the cities that although not in high positions, local authorities still have issues to solve and to improve in favour of their citizens. It can be said that cities in the second sector aspire to become first players in the near future once some indicators in determined factors are tackled. These cities have qualities resulting in very attractive factors for some kinds of companies and their competitiveness is high enough to sustain the economy at an adequate level. Most of the direct investment flows to these cities flows thanks to their specific characteristics, but they still need to lobby investors. They compete with the cities in the first sector although not always successfully and they tend to have unique assets that might be exploited by their governments, like a geographical position, extensive green lands, oilfields, etc.

In 1990, Toluca Merida, Villahermosa and Tampico were the examples of this comparative advantage. Toluca (52 km away from Mexico city) saw their economy soar thanks to their closeness to Mexico City, companies relocated without moving far from their market and in some cases employees were living in Toluca while working in Mexico City. Merida consolidated itself as the most and biggest city in the isolated Yucatan peninsula. Companies supplying the whole region are located here thanks to Merida's central and thus optimal location as a distribution centre. Villahermosa and Tampico were the oil centres in Mexico. Leon and Morelia thrived to achieve this position due to their low-value manufacturing (leather confection and food processing).

The third sector (pink) is somehow representative of a low economic development stage but with certain positive dynamics for the cities included here. They are not the total "losers" but more support is required by local authorities from the regional and central government. This sector is where economic growth moves to economic development due to the impacts of investment and efficiency on employment and social expending. 1990 saw nine cities in this sector all of them located in the centre of Mexico, but La Paz, with small populations and poor and stagnated economies. Without a deep analysis, it is easy to identify the main attributes of these cities: government is the biggest employer and retailing being the second; the lack of education amongst the population and dependable on regional hand-outs. The city of Pachuca suffered a massive loss of jobs at the end of the 1980's due to the shot down of big international companies like Bombardier, Chrisler, Mercedes and Renault due to the wide variety of problems ranging from unions to corruption scandals involving local politicians.

The fourth sector represents the very low economic development level. The cities located in this quadrant are mainly places expelling people, social unrest is latent, and large portions of the population live under extreme poverty. In contrast with the "rich" cities of the first sector, the "poor" ones are unable to create sustainable economic conditions for businesses and people. Performing at very low competitive levels, and having no relevant factors to attract investment, these cities need entirely economic support from central government through especial programmes to support the deficiency of job, education and infrastructure.

Tuxtla Gutierrez, Oaxaca, Campeche, Chilpancingo, Acapulco and Chetumal are all situated in the south of Mexico and in the Yucatan peninsula. Geographically located close to disperse settlements in a rough terrain and far away from large markets, these cities hinge on their own market mechanisms to first keep on and then to growth if it is possible. As it will be seen, it is really difficult to leave this "poverty trap".

Mexico went through a very difficult period from the end of 1994 until the beginning of 1996, when a deep economic crisis hit the country and changed the competitive conditions for all cities and regions due to the scarcity of economic resources. Yet, manufacturing and service companies were forced to relocate in order to save costs



firing employees, cutting imported raw materials and in some cases to agglomerate in some cities to take advantage of economies of scale.

Figure 8.2 presents the classification of the cities for 1995, where at a first glance, it is possible to visualise the changes in positions with respect to 1990.

Large cities were affected in their attractiveness position where Guadalajara and Mexico City were moved to medium-low attractiveness level. It is consistent with what it could be expected according to the literature. Since large cities also have some disadvantages (pollution, traffic congestion, expensive housing and so on), the impact of economic shocks is a good reason to rethink the strategic operation of business.

**Figure 8.2 Competitiveness, attractiveness and development, 1995**

	Highly Attractive	High-Medium Attractive	Medium-Low Attractive	Low Attractive
<b>Highly Competitive</b>	Monterrey Torreón Chihuahua	Veracruz Cd. Juárez	Guadalajara Toluca Puebla Mexico City	Cuernavaca
<b>High-Medium Competitive</b>	Tijuana Hermosillo Querétaro Villahermosa Merida	Mexicali Aguascalientes Saltillo Morelia	La Paz	
<b>Medium-Low Competitive</b>	Colima Cancun	Culiacán Tepic Durango	Tampico Zacatecas Guanajuato	Leon Cd. Victoria
<b>Low Competitive</b>		San Luis	Chilpancingo Xalapa	Campeche Pachuca Tlaxcala Chetumal Oaxaca Acapulco Tuxtla Gtz

The number of "perfect" cities, those in the highly competitive and attractive, was reduced to only three. The economic crisis saw the cities of Mexicali and Saltillo lose their privileged position to one stage down, second sector (blue). Nonetheless both



cities were allocated in the best possible place in the second sector (high-medium attractive and high-medium competitive). Torreon moved from a low attractive a highly attractive position within the first sector. Zacatecas also went down one position.

Medium size cities lured in some companies looking for less expensive places to produce and provide services. In the redistribution of economic activity the cities of Aguascalientes, Villahermosa, Merida and Durango improved their position with respect to 1990. Villahermosa is a city totally dependent on oil production and due to this fact its economy was favoured since at that time oil prices went up. For the cases of Durango and Merida, there is not a straightforward explanation for their economic improvement but it could be attributed to local government's policies rather to an external shock like in the case of other cities.

Looking at the worst performers in the low competitive and attractive corner, there are two facts that deserve especial attention. Firstly, the number of "poor" performers increased from 6 to 7 and remained almost the same cities than in 1990, and secondly, only one city improved its position. The city of Chilpancingo had the possibility to move up to a more attractive position but the rest were in the same position. These cities were Tuxtla Gutierrez, Chetumal, Oaxaca, Acapulco and Campeche with the incorporation of Pachuca and Tlaxcala who lost their place.

After revising these two figures it can be noticed that most of the cities' improvements take place in the attractiveness and not in the competitiveness sector. This reinforces the theoretical perspective stating that competitiveness is a long-term process requiring a lot of effort by governments. The city of Cancun improved its competitiveness edge in one position without losing any attractiveness.

So far the evidence seems to suggest that it is easier to improve the attractiveness position than the competitiveness one. At the same time, achieving a higher development level implies an improvement in either competitiveness or attractiveness, fact reflecting the main paradigms for economic growth and development accumulation in the former and fair distribution in the later. Attracting investment is a natural way to increase the stock of capital in a city while increasing competitiveness

implies the concept of effectiveness and efficiency in the use of the assets. In an "efficient" city all the resources are used without waste. Effective cities will achieve their goals.

The last figure in this analysis corresponds to the data for the year 2000. It is an interesting year, which collected the profits of a steady growth after the economic and financial crisis of 1995. Cities benefited from a sustained growth rate of 4.5% on average leading to higher tax collection and higher expenditure. This year also meant the political changed that brought for the first time after the Mexican revolution a president from another political party other than the PRI.

The next figure portrays the dynamics of cities for the correspondent year showing how some cities really improved their positions in ten years. The analysis will be undertaken in two ways: the year 2000 standing alone and the year 2000 compared with 1990 and 1995.

The overall picture presents a 2000 figure with a more even distribution of cities along all the positions. It also had five cities in the highly attractive and competitive position, the most in the three figures presented. This portrays the economic expansion enjoyed after the economic slump, representing an economic development process: more cities with greater possibilities of success. Remarkable is the fact that all the megalopolis (Monterrey, Guadalajara and Mexico City) decreased their attractiveness level, according to what it would be expected for its urban size. Another important observation is that the border cities saw their dominance reduced. Zacatecas evolved from a medium-low attractive and medium-low competitive to a highly attractive but low competitive. Usually this kind of movements are associated with intensive efforts by local governments to become more attractive and the lost of competitiveness could be attributable to external factors such as other's cities strategies, immigration-emigration or national policies affecting the region in particular way.

The cities at the bottom of the figure were again Chetumal, Acapulco, Oaxaca, Campeche, Guanajuato and Chilpancingo, the later two newcomers to this negative position. All but Guanajuato were consistently occupying this sector in the time span



of this analysis which may results in the confirmation of the hypothesis that in some cases, the massive economic difference amongst cities is such that it is impossible for the poor ones to move forward to catch up with at least those located one step up in the economic development scale. The last statement arises the following question: Are poor cities going to be poor forever? Is there a margin for development? According to the evidence taken out of the figures, just three cities were able to move only one position up in ten years. None of the very bad performers moved more than one position and in some cases those cities able to move unfortunately went back.

The same could be argued in the case of the excellent performers at the very top of the figure, where the big cities never lost competitiveness. Sector 2 (blue) and 3 (pink) represented the real dynamism. For instance, Aguascalientes moved up to the very best position in 2000 when in 1990 it was in sector 3.

Highly competitive cities in 2000 were again losing attractiveness in comparison with the previous figure; Monterrey and Torreón. Nonetheless some of them maintained their previous positions: Toluca, Mexico City, Tijuana and Colima, the latter a very consistent performer who had the same position in all of the analysis.

Villahermosa, Cd. Juárez and Morelia went back one position. The former experienced the impact of lower oil prices and production cuts while the former had continuos changes at the regional government leading to certain political instability and thus expelling investment.

Puebla and León improved their competitiveness from 1995 to 2000, but in real terms the former lost one position with respect to 1990. These are ones of the few cities that presented some dynamism in competitiveness and stability in the area of attractiveness, since most of the cites moved in either direction in the attractiveness factor.



**Figure 8.3 Competitiveness, attractiveness and development, 2000**

	Highly Attractive	High-Medium Attractive	Medium-Low Attractive	Low Attractive
<b>Highly Competitive</b>	Queretaro Chihuahua Saltillo Veracruz Aguascalientes	Monterrey Torreon	Toluca Mexico City	Guadalajara
<b>High-Medium Competitive</b>	Tijuana Cancun Mexicali	Cuernavaca Cd. Juarez Culiacan	La Paz Merida Puebla	Leon
<b>Medium-Low Competitive</b>	Colima	Tampico Villahermosa Hermosillo San Luis	Morelia Cd. Victoria Xalapa	Durango Tuxtla Gtz
<b>Low Competitive</b>	Zacatecas	Tepic	Pachuca Tlaxcala	Chilpancingo Guanajuato Campeche Oaxaca Acapulco Chetumal

San Luis became more competitive with less attractiveness while Zacatecas gained attractiveness and lost competitiveness. Cd. Victoria and Xalapa were constant and remained in the third sector throughout the ten years.

Finally, if we take a look at the progress of the cities from 1990 to 2000, it can be seen that the "winners" are the same cities, those with large populations. The "losers" are small or medium size cities, usually with no interaction with international companies and with other cities within the country. Few if any are the real changes from one sector to another in the upper part of the figures, nonetheless changes occurred in the same concept. For instance, some cities improved their competitiveness in the ten-year period even when they remained in the same quadrant. Comparing the performance of cities in relation to their competitiveness and attractiveness it is possible to observe more cities progressing in attractiveness than in competitiveness. It is possible due to the time required to build a competitive framework for a city. The factors associated to this concept take longer to reach



maturity than those for attractiveness. Parks and hospitals, for instance, can be built in less than a year while the construction of motorways takes years. Education is even more complicated since it is not possible to forecast the amount and kind of human resources required in a city in a specific moment.

Figure 8.4 helps to see the relation between the GDP per capita and competitiveness and attractiveness.

Figure 8.4 Competitiveness, attractiveness and GDP per capita, 2000

	Highly Attractive	High-Medium Attractive	Medium-Low Attractive	Low Attractive
Highly Competitive	Queretaro (\$73889) Chihuahua (\$85555) Saltillo (\$74860) Veracruz (\$54520) Aguascalientes (\$68580)	Monterrey (\$92183) Torreon (\$67825)	Toluca (\$40589) Mexico City (\$86009)	Guadalajara (\$57195)
High-Medium Competitive	Tijuana (\$72473) Cancun (\$101407) Mexicali (\$67838)	Cuernavaca (\$51907) Cd. Juarez (\$76419) Culiacan (\$44315)	La Paz (\$67968) Merida (\$50690) Puebla (\$56297)	Leon (\$43072)
Medium-Low Competitive	Colima (\$53841)	Tampico (\$54403) Villahermosa (\$47651) Hermosillo (\$71659) San Luis (\$56060)	Morelia (\$44953) Cd. Victoria (\$66579) Xalapa (\$39672)	Durango (\$51529) Tuxtla Gtz (\$57217)
Low Competitive	Zacatecas (\$47036)	Tepic (\$41670)	Pachuca (\$55729) Tlaxcala (\$29946)	Chilpancingo (\$55881) Guanajuato (\$44579) Campeche (\$67599) Oaxaca (\$45818) Acapulco (\$47551) Chetumal (\$36846)

The most competitive cities have on average the highest salaries but the lowest salaries do not correspond to the lowest performers. Cities with the lowest competitive level are not those with the lowest salaries. There is a mix of cities in the last two quadrants of the figure. It is clear that rich cities have the highest competitive level. The most attractive cities do not necessarily have high GDP per capita. Low competitive performers in general tend to have low GDP's but in the overall picture,



cities with low attractiveness and low competitiveness have indeed the lowest GDP per capita.

The last figure also serves to prove that combining competitiveness and attractiveness it is possible to assess the economic development level and possible patterns needed to be followed by local governments to reach a higher stage. Cities at the very bottom right require less effort to move to the next quadrant than those in others. In fact, The first quadrant tells a picture of cities with high performances in competitiveness or attractiveness but it also evidences the possible strategies that exist for cities. For example, a highly attractive city but not very competitive (Zacatecas) might need to invest more in human resources or infrastructure or in general in those factors linked to competitiveness. On the other hand, cities with a high competitive level may want to increase their attractiveness but only in some specific sectors to take advantage of agglomeration economies without causing problems to both other industries and the population.

To sum up it can be concluded that the first quadrant (yellow) portrays cities with a good or potentially good economic development level. They already have a self-sustained steady economic growth and consequently the efforts of cities' governments are more to administrate and redistribute the growth to produce development. What is more, some local governments will be willing to lose companies considered as "polluters" or with a bad reputation in the community.

The urban policies of these cities should aim at sustaining the growth rate and to find other mechanisms to redistribute the wealth among the whole population. In some cases higher local taxes could improve the provision of social services by local governments, representing a "good way" to transfer the benefits of an increasing economic development. Attention should be focused on the administration of resources in the territory to avoid negative effects due to over agglomeration of industries and people.

The second quadrant (blue) represents the cities with an incipient economic development and looking to improve their competitive and attractive edge. Although they have factors to attract companies, they still lack of the self-sustained economic



cycle of the other cities. Local governments must dedicate still resources to look more attractive to investors and people and to retain those already in there.

Local governments must develop economic strategies to keep in positive motion the growth cycle to consolidate development. To do so, they need to build on factors that provide certainty to businesses and people to retain them such as education and political stability. Usually cities at this stage have created a comparative advantage and it is imperative to exploit it (regional trade centre, specialisation in a particular industry, oil producer and so on). In this way they can attract more companies to create scale economies for them. For people more companies represent the possibility of more jobs.

The third quadrant (pink) could be called "the transition sector" since at this stage the cities are looking for an improvement to reach a development level. It could be said that from this quadrant downwards cities are looking for economic growth. Cities in here face the risk of falling to the bottom in case of failure.

Any investment will lead to an improvement in the whole urban economic cities, thus local governments should make efforts to attract companies and to focus their efforts in attractiveness factors.

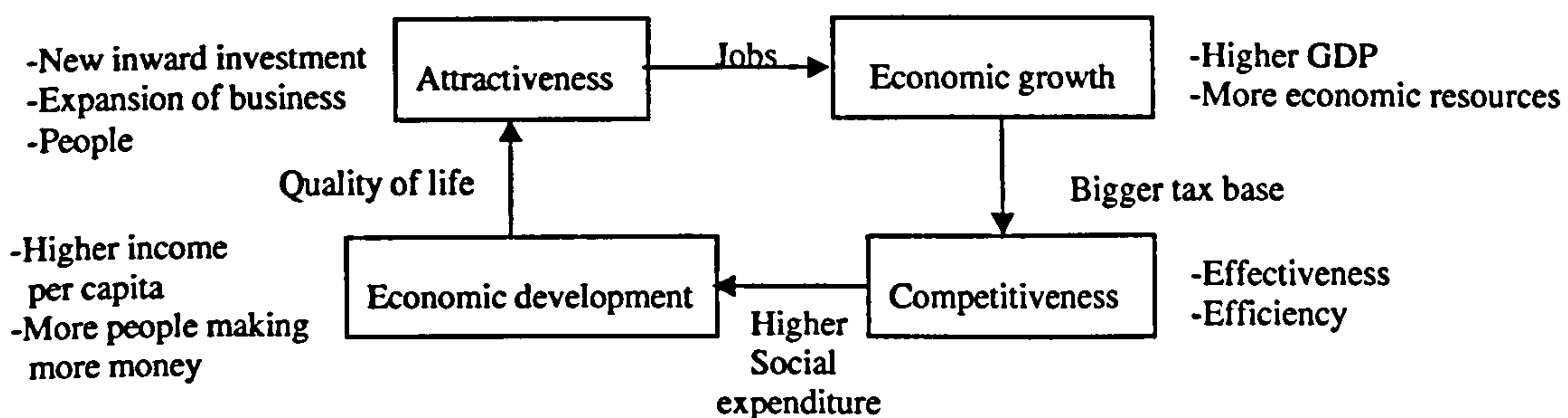
The fourth quadrant (green) is where the cities with a lot of opportunities are located. In spite of being very bad performers, their possibilities to improve the current situation are good since almost any positive change in competitiveness and attractiveness will increase their growth rate.

Although social issues are a priority for their governments, it is also mandatory to establish an economic base other than simple extent government employment. The lack of a diversify source of employment put these cities in a more sensitive position because any cut in central government's budget will have a higher impact on these economies than in those cities with a more diversify economy.

In conclusion, in order to grow cities need investment, need to be attractive to people and investors to generate jobs. In order to sustain that growth, cities need to be

competitive to use the resources effectively and efficiently by providing a business-oriented atmosphere. A sustained growth rate with a fair redistribution of wealth will lead to economic development, where higher salaries and better quality of life conditions will arise.

**Figure 8.5 Circular economic development process**



In order to prove that competitiveness and attractiveness do represent a function of economic development, the next section will assess formally the set of factors and their variables using econometric techniques.

### 8.3 Econometric model: economic development as a function of competitiveness and attractiveness variables.

The results presented begin with those of the regression models for each year: 1990, 1995 and 2000 and continue with the results of the panel data regression, using the variables for competitiveness and attractiveness. These are followed by a simulation of the economic development policies intended by the central government to see whether the increase or decrease the gap between poor and rich cities.

#### 8.3.1 Regression models, economic growth and economic development

The first part of the modelling process consisted of testing independently the capacity of the variables to explain the dependent variable  $y$  = population earning more than 5 minimum salaries for the case of economic development. This variable was chosen for its capacity to explain real economic development gains. The GDP per head does not envisage in any form of redistribution of wealth while an increase on the number



of people earning higher salaries does. Since more people earn more money, *ceteris paribus* conditions, the local market will thrive as well as sales and the economy will grow steadily.

The first statistical analysis undertaken was that of  $R^2$  and  $R^2$  adjusted to test that the selected variables do explain the variation for the dependent variable. The estimation proceeds with the traditional linear regression equation and included the following factors and variables:

Quality of life	Local market conditions
<ul style="list-style-type: none"> <li>Population aged 15 years-old or younger</li> <li>Ratio homicides/offences</li> <li>Household without potable water (%)</li> </ul>	<ul style="list-style-type: none"> <li>Total employed population earning less than a MS</li> <li>Total employed population earning up to 2 MS</li> <li>Bank deposits</li> </ul>
Local economic conditions	City promotion
<ul style="list-style-type: none"> <li>Inflation rate (p.a)</li> <li>Economic dependence factor</li> <li>Capital accumulation services</li> </ul>	<ul style="list-style-type: none"> <li>5 stars disposable rooms per 10,000 tourists</li> </ul>
Government	Business climate and suppliers
<ul style="list-style-type: none"> <li>Social expenditure in public works</li> <li>Total income local government</li> </ul>	<ul style="list-style-type: none"> <li>Establishments for commerce and general services</li> </ul>
Infrastructure	Human resources
<ul style="list-style-type: none"> <li>International flights</li> <li>Total Km roads and motorways</li> </ul>	<ul style="list-style-type: none"> <li>Work conflicts by every 100000 employees</li> <li>Unemployment rate</li> </ul>
	Technology
	<ul style="list-style-type: none"> <li>Public expenditure in Research and development</li> <li>Internet connections</li> <li>Total postgraduate students</li> </ul>

It can be seen that all factors are represented at least with one variable. As it could be expected, quality of life, technology, economic and market conditions resulted with a larger number of variables. City promotion had a very low representation and particularly the variable "per capita investment in city promotion" lacked of any representativeness and was taken out of the model. This suggests that economic development is not related to promotion activities as it has been argued by politicians.

As it is shown in table 8.3, evidence seems to point out that economic development can be depicted as a set of competitiveness and attractiveness factors, although for 1995 the  $R^2$  adjusted poses a low value, attributable to the economic crisis of that year which changed drastically just for a while the performance of various cities. These results are in accord with the theoretically expected results proposed in

previous chapters where it was argued that economic development depends on urban attractiveness and competitiveness.

Nonetheless, the model's statistical summary exhibited in table 8.3 shows that for the year 1995 the same set of variables loses capacity to explain the variance with the same robustness than those for years 1990 and 2000. Such problem is directly related to the economic crisis of 1995 and the model is unable to capture the abrupt economic slump.

$R^2$  is not statistically significant for the year 1995 regression, indicating that there was no explanatory capacity (variance) with the same set of variables as those for the years 1990 and 2000.

**Table 8.3 Models statistical summary: economic development**

Year	$R^2$	$R^2$ adjusted	F prob.	Std error
1990	0.930	0.857	12.657	1.1352
1995	0.672	0.326	1.942	3.4404
2000	0.961	0.919	23.207	1.8265

The table above also reveals that economic crises cannot be predicted in terms of these variables. Even when other dependent variables (people earning up to 2 minimum salaries, Km of roads and motorways, post graduate students) were tested in order to obtain a more suitable  $R^2$  adjusted for 1995 data, the results were either lower or an approximation of the same value presented in the table. However, this is normal when linear regression models are utilised.

Comparing these models with others of the same kind, it is possible to say that the set of variables selected provides a good equation to predict the effects of *some* policies on economic development at urban level. I remark in italics "some" because not all the variables are under the control of governments though they can influence the outcome in specific cases. For instance, the three variables encompassed in the models: population less than 15 years of age, the ratio homicides/offences and households with potable water, can be tackled by government policies with different intensity. Thus the ratio homicides/offences and households with potable water are



affected directly and immediately by policies since security services for the population and the supply of water are under total control of local governments. Population structure is affected by national and regional government policies but people make a "personal" decision about how many children they will have.

The following table presents the  $\beta$  and t-student values for each model in order to provide the statistical significance of each variable and to assess the whole model. In general, the values are within traditional parameters even though some signs seem not to correspond to what it is usually expected. For instance, the growth of capital accumulation has a negative sign indicating an opposite correspondence, which would not make too much sense since the expected result is that more capital accumulation will induce growth and hence economic development.

**Table 8.4  $\beta$  and t values**

Model	1990		1995		2000	
	Std $\beta$	t value	Std $\beta$	t value	Std $\beta$	t value
Intercept		4.087		.484		2.986
Population less than 15 years-old	-.038	-.337	.025	.076	-.118	-1.322
Ratio homicides/offences	-.20	-.253	-.107	-.559	-.080	1.459
Household without potable water (%)	.21	.261	.129	.551	.174	-2.964
Inflation rate (p.a)	-.077	-.706	-.251	1.036	.001	.021
Economic dependence factor	-.347	-2.582	-.303	-.948	-.841	7.708
Capital accumulation services	.046	-.498	.045	.284	.053	.521
Social expenditure in public works	.026	.287	.120	.556	.025	-.421
Total income of local government	.028	-.201	.081	-.306	.139	1.55
International flights	.173	1.08	.193	-.834	.087	-1.079
Total Km roads and motorways	.132	-1.007	.128	-.477	.185	2.108
Total employed population earning less than 1 MS	-.034	0.406	-.352	2.011	-.013	.205
Total employed population earning up to 2 MS	.399	-2.598	-.238	-.816	.164	1.328
Bank deposits	.310	-1.854	.517	-1.503	.396	-3.046
5 stars disposable rooms per 10,000 tourists	.317	3.298	.011	-.038	.091	1.180
Establishments for commerce and general services	.042	0.397	.104	.365	.177	-2.413
Work conflicts by every 100000 employees	-.026	.238	-.143	-.627	-.113	1.040
Unemployment rate	.213	2.161	.509	2.827	.045	-.661
Public expenditure in Research and development	.004	.040	.092	.394	.025	-.374
Internet connections	.004	-0.051	.188	-.968	.141	-1.897
total postgraduate students	.002	-.022	.055	-.296	.115	1.667

To prove that economic development variables and growth variables, I repeated the process to obtain the correlation matrix and then select those variables with correlation levels with acceptable parameters. The final set of variables for growth was that accomplishing  $F > 0.05$  as usual in this kind of equations.

The final variables selected were:

Local economic conditions	Government
<ul style="list-style-type: none"> <li>Value added manufacturing sector</li> <li>Capital accumulation (%) service sector</li> <li>Inflation rate</li> <li>Total workers in the service sector</li> <li>Valued added service sector</li> <li>Capital accumulation (%) manufacturing sector</li> <li>Total workers in the manufacturing sector</li> </ul>	<ul style="list-style-type: none"> <li>Social expenditure</li> <li>Government income (taxes collected)</li> </ul>
Local market conditions	Human resources
<ul style="list-style-type: none"> <li>Total employed population</li> <li>Population earning more than 5 minimum salaries</li> <li>Bank deposits (M1+M2)</li> <li>Population earning up to 2 minimum salaries</li> </ul>	<ul style="list-style-type: none"> <li>Unemployment rate</li> </ul>
	Quality of life
	<ul style="list-style-type: none"> <li>Total population.</li> </ul>

It can be seen from the list of variables that there is a strong representation of variables associated to the economy and the market at local level as it could be expected. Business climate and suppliers, infrastructure and technology resulted in a lack of representativeness since either their correlation levels or their F values were not the relevant ones.

The following table exhibits also that the variables for economic growth have good  $R^2$  and  $R^2$  adjusted values, proving that the model can explain a great portion of the variance.

**Table 8.5 Models statistical summary: economic growth**

Year	R2	R2 adjusted	F prob.	Std error
1990	0.726	0.572	4.722	10266.5
1995	0.737	0.572	4.474	9830.26
2000	0.733	0.63	5.435	9750.86

Comparing both statistical summaries it can be concluded that development and growth are local level at two different concepts. The set of factors and variables



identify the differences in both cases. What is more, the variables associated to growth portray clearly the economic slump of the Mexican economy in 1995 as it is expected in such models and their variables.

It also proves that while economic growth has a well-defined pattern and it is perfectly conceptualised, the concept of development at formal level, is still far away from the perfection level identify for growth models. This has been one of the most common debated amongst economists and those scholars devoted to the study of development and growth. For the scope of this research, this finding is relevant due to the fact what it is needed is development rather than simple economic growth. It has been presented in here how traditional search for growth has put many cities in a very disadvantageous position in terms of their capacities to compete for investment and form high skilled people.

Clearly, development and growth are not the same, and the proposal made in this research to argue that competitiveness and attractiveness factors are capable of representing the economic development level of cities, seems to provide some insights. Firstly, the set of factors points towards a differentiation between development and growth. Secondly, although for traditional economists the selection of the variables for each factor can be subject to scrutiny and thus rejected a priori, such approach could be narrow-minded. The evidence suggests that some factors and some variables indeed can capture an acceptable level of variance for the sample of cities selected. In comparison with the growth model, the development one is unable to adjust properly to abrupt changes in the economic system. Thirdly, nonetheless the opportunity to increase the utilisation of more manageable econometric models, like the one proposed here justifies a proposal that enable local authorities to understand and model the possible effects on the city of their policies and actions taken.

The next step is to analyse the data for the three year all together in order to find out if there is a pattern. So far, it is possible to conclude that independently the regression model applied to the different years cannot capture the variance for 1995, showing an incapacity to predict economic downturns. When the sample of cities has a marked stability and a steady growth rate, the variables are able to capture most of the variance.

This statistical method in conclusion does not provide conclusive evidence about whether or not economic development is a function of competitiveness and attractiveness. It shows that only under certain circumstances it can work. Consequently there is a need to test the data with a statistical method capable of taking the whole data set at one time, while allowing comparisons with the results already obtained in this section.

#### *Panel data model and analysis*

The original data set comprised of 72 variables and was reduced to 9 due to high statistical correlation and/or low statistical significance in the t-value (less than 1)<sup>2</sup>. The final model is resulted as follows

**Table 8.6 Statistical summary for the panel data model**

Variable	t-statistic	Coefficient
R2	0.1791	0.911883
R2 Adjusted	2.0376	0.767600
Robbery	2.6916	0.000589
Industry capital growth accumulation	-3.0431	0.031006
Bank deposits	2.7442	0.026943
Population earning less than 1 MS	3.6816	-0.873113
Population earning up to 2 MS	1.1501	0.399595
5*hotels rooms	-1.705	0.010040
Population in age to work	1.7454	0.000006
Illiteracy rate		-0.000232
Threat of union action		0.007797
<b>Fixed effects values</b>		<b>Coefficient</b>
Robbery		-1.3410
Industry capital growth accumulation		0.7074
Bank deposits		-5.0513
Population earning less than 1 MS		-5.8288
Population earning up to 2 MS		-5.9369
Population earning more than 5MS		-3.0356
5*hotels rooms		0.0438
Population in age to work		5.3492
Illiteracy rate		2.1615
Threat of union action		-13.0763

As it could be expected, the reduced number of variables in the model obeys to the fact that in a large data set of economic variables must of them are highly correlated statistically.

<sup>2</sup> As stated in Maddala, 2001, p. 165.



Firstly it is important to analyse the coefficients and their signs.  $R^2$  and  $R^2$  adjusted resulted with a considerable high value which suggests that the independent variables ( $x_1$ =robbery,  $x_2$ =ind. Cap.accum,... $x_9$ =threats of union action) selected are capable of explaining the variance for the dependent variable  $y$  = population earning more than 5 MS.

The signs of the coefficients are according to the operational logic with the exception of "robbery" having a positive sign as well as "threats for union action" but with a very low value in both coefficient and t-value for the former and a high t-value for the latter. Having said that, it is important to explain why they were left within the model. The first reason deals with a statistical purpose. Taking the variables out of the equation led to a substantial change in other variables, as it can be seen in the statistical appendix, not just changing the correct signs of other variables but also they t-value and finally reducing the value of  $R^2$  adjusted. This combination of variables led to the best model in terms of its  $R^2$  adjusted and signs.

Green (1999) contends that in panel data cases where just one or two variables have the capacity to drop model's viability, it is recommended to leave just when the  $\beta$  coefficient is as lower as possible to reduce the incidence on the overall model as it was the case.

Industry capital accumulation, bank deposits, population earning up to 2 MS, 5\*hotels, people in age of working and threats of union action have positive signs. This means that an increase in their values would lead to a higher number of people earning more than 5 minimum salaries. The growth of capital in the industry lead to economic growth and serves as a platform for more output. Capital has to come from somewhere, and in this case bank deposits are transformed into capital via loans to productive organisations. People earning up to 2 minimum salaries is a variable that explains the current employment structure. More people earning more than this limit could be understood as people with the potential to reach the 5 minimum salaries in the future. A good measure of business travel as well as of infrastructure is the number of 5\* hotel rooms in a city. It is well known that businessmen take them a provisional headquarters for their activities outside their own residence.

At the same time, such hotels require a demanding parallel infrastructure like availability of water, electricity, roads, airports, etc. In this way, to increase business activities and to achieve a higher development level it is important for cities to have these kinds of hotels. People in age of working represent the availability of labour in a place. A very tight labour market pushes salaries up and very large pools of labour decrease salaries and wages. The variable "threats for union action" is especial case statistical case according to its properties. It has high t-value (1.7254) but a very low, almost insignificant coefficient (0.007797). Maddala (2001) suggests that under these conditions, assuming that there is no other combination of factors, it is reliable to leave it in the model. None the less the model decreases its predictability property if it is to be used to forecasting purposes with small samples.

Secondly, it is important to check the fixed effect coefficients and what they "say" about the variables. The highest value is for threats for union action with a negative value of -13.07631. This represents the robustness of the factor in comparison with the others when they interact. In a few words, this variable has the greatest impact on the performance of the model. Amid its statistical value, there is no concluding evidence to support the contention that this is the most important element to increase the economic development level of a city. Comparing the fixed effect with its regression coefficient it is possible to notice the contrast. While the variable alone has no impact on the model, its t-value shows that somehow the variable is explaining part of the variance for the whole model, probably associated to the high variance of one specific year. Nonetheless, this effect is expected when a mix a variables is used, like in the case of this research where social, economic, political and even technological variables are included.

Bank deposits, population earning one MS and up to two MS and people in age of working also resulted in high coefficients. Industry capital accumulation and 5\*hotels had a low fixed effect coefficient. Arguably, this is consistent with their low coefficient in the regression.

Thirdly, it is necessary to look at the type of variable included in the model. As the variables classification is concern, basically only quality of life (Robbery), local market conditions (bank deposits, population earning 1, 2 MS) city promotion



(5\*hotels) and human resources (Population in age to work, Illiteracy rate, Threat of union action). It can be seen that human resources participate in the model with three variables, as well as variables associated to market conditions. This could mean that such factors have a preponderant role in the explanation of the variance for the variable "people earning more than 5 MS" or in the explanation of the number of rich people.

The variables selected for this model can be regrouped into three factors that make sense to explain economic development processes in cities:

- a) Labour and its performance: people in age of working; illiteracy rate; threats of union action; robbery.

The grouping obeys to a relationship between the variables and even though when "robbery" for some scholar might look as something not related, it is possible to argue the opposite since high unemployment levels are associated directly to theft and other illegal activities.

- b) Labour market salaries: Bank deposits; people earning one MS; up to two MS and more than five MS. The structure of the labour market has a direct impact on the possibilities of an economy to increase its standard of life. Cities with relatively low salaries will struggle to attract jobs with higher salaries. The evidence suggests that industries rather than paying more to employees in location where costs are low, they adjust to the environment and put salaries down. The consequence is that there is less money for savings affecting the amount of money in the economic system. Needless to say that places with high rates of illiteracy and union activity will be lacking of opportunities to induce a growth and development process.
- c) Business infrastructure: 5\* hotels. Since business people need a place to carry out their operations when they are out of their original place of operations, hotels play a very important role, not just as tourism infrastructure but also a business platform to facilitate economic transactions.

Fourthly, the model's statistical properties satisfy the traditional criteria. The errors of the regression are distributed randomly and not show any pattern. The degrees of freedom of the final model are 71, using the formula provided by Green (1999):

$$nT-(n+k)$$

Where  $n$ =sample of cities=40

$T$ =years or cross sections=3

$K$ =parameters or variables=9

$$40*3-(40+9)=71$$

As it was mentioned earlier, even when two variables did not have the expected signs, their contribution in terms of their coefficient was close to zero and they helped to keep the balance in the equation for the rest of the variables.

The selection of the panel data method, in this case in favour of fixed effects over random effects, was due to Hausman's test firstly, and secondly for the fact that random effects intends to do inferences over the sample rather than for the variables.

It is possible to infer for almost any reader that the formulation of the model was not *a priori*. All the iterations to arise with the present model took place using statistical techniques widely accepted by scholars to find the best results. For this research, the best result seems to be the best  $R^2$  adjusted and a set of variables logically associated to the economic theory in development economics. These comments deal with only one fact: the best possible model selection.

Fifthly and finally, it is important to link the model to urban competitiveness and attractiveness. In order to answer the research question of what is the role of competitiveness and attractiveness factors in urban economic development, the resulting model has to be explained according to them.

As it could be expected, the model presents a balance between what it was called competitiveness and attractiveness variables. Human resources' variables are associated to competitiveness while local market conditions are to attractiveness. The important point here is that whatever the possible classification of factors is the traditional elements studied in a wide range of fields seem to lead to the same possible outcome. Governments need to invest in people and keep the economic conditions in the local system under "control" to avoid errors in the strategic planning of all the



organisation operating in that territory. The simple formula of "invest in education" also operates under this approach.

Thus, the contribution of the model is in two ways. One in which the selection of variables enables local governments to create a set of variables aiming to provide a comparative framework with other cities to see "where they are" in relation with other competitors or cities. Putting together competitiveness and attractiveness factors they can have a reference for a possible development pattern. Yet, it is possible to select a platform of action, either creating strategies to increase their competitiveness or to attractiveness, according to their current status.

The other contribution relies on the proposal of the model to provide a framework to assess the possible outcomes of a specific action taken by local authorities although it is important to recognise that they cannot influence some variables directly.

While other models may emphasise the statistical complexity and the mathematical formality, it has been demonstrated, keeping the normal proportions and respect for all, that there is another way to look at the economic development process. Achieving the same conclusion where again human resources are at the core proves that when selecting an appropriate set of variables related to competitiveness and attractiveness, it is possible to portray an economic development function for urban areas or cities. What is more, in doing so, it is likely that the same data provides insights for other analysis not just modelling.

#### 8.4 Attempting to build a "complete" model

After analysing the results of the statistical model in the last section, I argue that it is necessary to present another model capable of including more variables in order to capture the impact of different economic and social policies on cities. This new model achieves the objective of providing a framework where all variables are included, and at the same time, the local economic development function (LED) is portrayed in terms of city attractiveness and competitiveness. Yet, I propose that this function can be represented as:

$$(1) \quad LED = ((1+HR+BCS)^{1+INF} + (1+MC)^{1+EC})^{1+TECH} + (1+CP+QL)^{1+GOV}$$

Where:

HR=Human resources

BCS=Business climate

INF=Infrastructure

MC=Market conditions

EC=Economic conditions

TECH=Technological support

CP=Promotion activities and city image

QL=Quality of life

GOV=Government

And

$$(2) \quad (1+HR+BCS)^{1+INF} = \text{Business inputs}$$

$$(3) \quad (1+MC)^{1+EC} = \text{Economic determinants of the local economy}$$

$$(4) \quad ((HR+BCS)^{INF} + (MC)^{EC})^{TECH+1} = \text{Technology effect}$$

$$(5) \quad (1+CP+QL)^{1+GOV} = \text{City image and life conditions}$$

The values for each factor (HR, BCS, INF, etc) are the average of the variables. Formally it is represented by:

$$HR = \overline{HR} = \frac{\sum_{i=1}^n x_i}{n}$$

$$BCS = \overline{BCS} = \frac{\sum_{i=1}^n x_i}{n}$$

.

.

.

$$GOV = \overline{GOV} = \frac{\sum_{i=1}^n x_i}{n}$$

Equation (2) is the framework for business inputs in an economy. Human resources or labour plus the business climate and suppliers are the basic “raw materials” for companies in all sectors manufacturing, services, commerce, agriculture, etc. These raw materials have a productivity rate affected by the supply of infrastructure in a place. This factors posses the capacity to influence business production since the



movement of all business inputs depend on it. For instance, roads in bad conditions or the lack of them will increase the time between the company's production line and the final consumer, increasing the operation costs and therefore decreasing the effectiveness.

Equation (3) establishes the general economic conditions. The starting point is that the market conditions in a place determine production rates that are affected by the local economic conditions. If the economic conditions of the place are not adequate for a good pricing policy, citizens have the option of "importing" from another city.

Equation (4) shows what I called the "technological effect" which could be defined as the impact of the technology on the local players. The pace at which technology increases in a place will provide a competitive advantage for the local companies. Another consideration is that technology affects directly labour productivity and the capacity of suppliers to achieve faster response times and to provide better products and services. Thus, the economy increases by improving the salaries and wages without causing inflation. More and more efficient products reach the market at lower prices. Infrastructure is affected through the development of new technologies to build houses or roads faster and cheaper, with materials lasting longer.

Equation (5) points out the non-economic attributes of cities like the quality of life and the local government's efforts to promote the city among investors and people. The factor "government" is considered as an exponent due to its capacity to influence directly the promotion efforts as well as the provision of most of the elements considered to evaluate the quality of life in a city. This equation portrays city attractiveness very clearly since all the factors considered are part of it.

The four equations cited and explained before offer a good way put together the main protagonists of the local economies: businesses, people and government. Social institutions are not represented directly due to a lack available data firstly, and to the economic scope of this research secondly.

I attempt to represent a local economy more in terms of factors than in terms of variables as. The justification is that traditional econometric models attempt to reduce

complexity by decreasing the number of variables keeping the complex mathematical structure. On the other hand, this model increases the number of variables while decreasing the complexity of the mathematical structure without losing representation. Another contribution of the model is its flexibility to integrate qualitative elements that are not usually incorporated in traditional models.

The model assumes that the cities are independent nucleus. The characteristics of the data make impossible to determine into what extend some circumstances (i.e. geographical distance to a capital, trade with other cities, economic policies, travel between a couple of cities, to name but a few) influence the performance of a city due to another. Another important assumption is that all the factors have the same relevance in the equation. In every case, the unit added in every piece of the equation is simple a mechanism to eliminate the decreasing effect of exponents below one and in this way to illustrate adequately the gap.

In order to keep the properties of the model and as a difference with the regression model of section 8.3, ALL the variables were converted to the same condition. This means, since the model considers that “greater is better” (Km of roads per head, hospitals, amenities, etc.) and in the case of some variables “lower is better” (crime rates, unemployment rate, inflation, etc.), I converted of all them to the condition “greater is better” by subtracting one from the normal  $N \sim (0, 1)$  value.

#### 8.4.1 Results

The expected result of equation (1) is a local economic development index which is in terms of a normal value  $N \sim (0, 1)$ . In this way, is possible to compare how much better off is a city in relation to the rest of sample and with the city itself in previous years.

The LED index was formulated for the years 1990, 1995 and 2000 to compare the possible progress of the sample of cities in a period of ten years. The following are the year 2000 indexes for Monterrey, Morelia and Campeche to illustrate the way the values were reckoned.

$$\text{LEDIndexMonterrey} = ((1+0.9783+0.9642)^{1+0.9828} + (1+0.9894)^{1+0.9712})^{1+0.9801} + (1+0.9761+0.9728)^{1+0.9408}$$



$$\text{LEDIndexMonterrey} = 145.75 + 8.1567$$

$$\text{LEDIndexMonterrey} = 153.91$$

$$\text{LEDIndexMorelia} = 15.88$$

$$\text{LEDIndexCampeche} = 4.08$$

The following step is to present the complete table with the results for the three cross sections (1990, 1995 and 2000) and to compare and discuss the results to evaluate the capacity of the model to represent the “reality” according to the data and to the analysis carried out in the first part of this chapter. The first period to be analysed is 1990 and is presented in table 8.7, where it can be appreciated that the biggest cities in terms of their population are amongst the first places. The model seems to point out the asymmetries between the rich and poor cities in a more categorical way.

**Table 8.7**  
**Local economic development Index 1990**

City	Index	City	Index
1.Mexico City	139.64	21.Culiacan	17.14
2.Guadalajara	119.87	22.San Luis	15.98
3.Cd. Juarez	105.96	23.Merida	15.56
4.Monterrey	101.28	24.Zacatecas	15.39
5.Tijuana	92.44	25. Villahermosa	14.69
6.Chihuahua	90.16	26.Cd. Victoria	13.76
7.Mexicali	88.14	27.Aguascalientes	12.28
8.Puebla	82.62	28.Tepic	11.73
9.Salttillo	78.56	29.Pachuca	10.02
10.Hermosillo	70.23	30.Guanajuato	9.63
11.Veracruz	63.38	31.La Paz	9.11
12.Cuernavaca	61.39	32.Xalapa	8.46
13.Queretaro	53.52	33.Durango	7.83
14.Cancun	50.28	34.Chilpancingo	7.91
15.Toluca	49.46	35.Chetumal	6.15
16.Colima	35.49	36.Acapulco	5.67
17.Torreon	28.62	37.Tuxtla Gtz	5.12
18.Tampico	22.83	38.Oaxaca	4.88
19.Leon	20.01	39.Campeche	4.49
20.Morelia	17.93	40.Tlaxcala	3.94

Another important finding derived from the model is the agglomeration of cities around certain values. The model shows that in the case of some cities their development level is more or less the same. For instance the difference between places 20 to 25 is only less than four points. At the same time, it is possible to appreciate the big leaps between development levels. For instance, the index between

Mexico City and Guadalajara is around 20 points while the difference between San Luis and Merida is less than one point.

Using the indexes as a reference, it is possible to assemble cities in order to create groups with cities having a similar value. This is useful to create urban policies aiming at improving the factors and variables analysed and therefore to increase their economic performance in the medium and long term. The information obtained in this chapter seems to evidence that it is possible to improve considerably the economic development of a city. Nonetheless, it is uncertain at what level the city should be to capitalise growth opportunities since there is not a positive example of any poor cities improving in their development index. Indeed some cities improved three or four places in their ranking but the index argues that this is due to the lost of pace of other cities rather than to an improvement.

Table 8.8 exhibits the indexes for the year 1995, a complicated year for the Mexican economy as it was argued previously. The indexes for the cities suggest a catch-up process among the cities selected in this sample.

**Table 8.8**  
**Local economic development Index 1995**

City	Index	City	Index
1. Chihuahua	149.14	21. Culiacan	41.56
2. Tijuana	141.29	22. Tepic	39.93
3. Monterrey	138.47	23. Morelia	38.42
4. Mexico City	129.36	24. Durango	37.61
5. Guadalajara	126.22	25. La Paz	31.74
6. Cd. Juarez	124.68	26. San Luis	30.41
7. Toluca	123.49	27. Tampico	29.87
8. Torreon	115.74	28. Leon	26.78
9. Cancun	111.25	29. Zacatecas	26.32
10. Veracruz	105.43	30. Guanajuato	25.19
11. Puebla	101.91	31. Cd. Victoria	24.88
12. Queretaro	90.46	32. Chilpancingo	22.79
13. Saltillo	89.49	33. Acapulco	22.38
14. Mexicali	86.71	34. Tuxtla Gtz	21.22
15. Colima	70.83	35. Xalapa	20.93
16. Aguascalientes	61.68	36. Tlaxcala	19.84
17. Hermosillo	56.23	37. Campeche	19.53
18. Cuernavaca	54.94	38. Pachuca	18.99
19. Villahermosa	51.15	39. Oaxaca	18.72
20. Merida	47.61	40. Chetumal	17.38



The gap among cities, regarding the index, presents a more balanced set of indexes from the first place to the last one. This fact can be due to two factors: a) decreasing values in some of the factors for cities in the first places owing to the national economic conditions (more likely according to the academic literature) or b) owing to the concentration of economic activities for most of the big cities that took place immediately after the crisis, economies of scale for some of them thus became negative leading to a loss of competitiveness. What is relevant in any case is the fact that the model seems to capture this economic effect.

The year 2000 was the last year of PRI (Institutional Revolutionary Party), the political party that ruled Mexico for 74 years. In its place the political party PAN (National Action Party) took on the political and economical power. What can be inferred from the model's results for this year?

Table 8.9 points out toward a backward trend where the gap increases again in terms of its size. Also, the index reflects the decadence of the megalopolises and the resurgence of both medium size cities close to Mexico City and the cities located in the central corridor. The model captures how the gap between the 25<sup>th</sup> and 30<sup>th</sup> place increased notably, as well as between the 10<sup>th</sup> and the 15<sup>th</sup>.

**Table 8.9**  
**Local economic development Index 2000**

City	Index	City	Index
1. Monterrey	153.91	21. Puebla	50.36
2. Chihuahua	139.11	22. Tampico	46.18
3. Queretaro	121.65	23. Villahermosa	41.39
4. Torreon	120.14	24. Hermosillo	32.17
5. Saltillo	119.81	25. San Luis	28.86
6. Aguascalientes	108.40	26. Leon	27.92
7. Cancun	107.29	27. Tepic	25.69
8. Tijuana	103.34	28. Cd. Victoria	21.74
9. Mexico City	103.26	29. Xalapa	20.28
10. Mexicali	101.67	30. Morelia	15.88
11. Veracruz	90.73	31. Durango	13.82
12. Guadalajara	88.64	32. Pachuca	11.97
13. Zacatecas	82.08	33. Tlaxcala	10.04
14. Toluca	77.49	34. Tuxtla Gtz	8.74
15. Colima	69.34	35. Acapulco	8.31
16. Cd. Juarez	66.47	36. Chilpancingo	8.15
17. Cuernavaca	64.53	37. Guanajuato	6.47
18. Culiacan	61.49	38. Oaxaca	5.99
19. La Paz	58.23	39. Campeche	4.08
20. Merida	53.98	40. Chetumal	3.97

The constant growth period from 1997 to 2000 benefited mainly to the traditional high economic development cities than to those requiring real growth to keep on the catch-up process started in the year 1995.

It is important to notice that taking all the tables together it is possible to see that from the period from 1995 to 2000, the model suggests that the gap is increasing again in contrast with the period 1990-1995 where there seemed to be a convergence in terms of the economic development index. This result is congruent with the argument presented by Tondl (2001) who says that economic crisis within a country usually lead to a convergence regarding income and regional economic growth due to the higher impact on rich and dynamic cities due to the reduction of economic activity.

The model also seems to suggest that the gap between the winners and losers has not been reduced in ten years. In spite of small changes in the positions at the bottom of the latest table where some cities have improved a couple of places, important changes have not occurred there. On the contrary, cities which have improved their position more drastically were located originally in the middle and moved up to the first places. From this fact is possible to infer that cities require a minimum of resources (whatever they are) to be able to generate enough synergy to improve their economic development situation. The examples of the cities of Queretaro and Aguascalientes illustrate how it is possible to move quite a few places up, provided the conditions and the resources are there.

The results and positions provided by the model are congruent with the results drawn from figures 8.1 to 8.3. What is more, it could be argued that this model complements and confirms the assumption that competitiveness and attractiveness factors do have the capacity to evaluate and represent the economic development of a set of cities.

Another contribution of the model is its capacity to show when a city moves up in the ranking due to other cities' problems and not to a real improvement. This is important in order to evaluate urban policies and to scrutinise more careful the economic trends in a place. Politicians are prone to present rankings in order to show off to their population their "progress" and how they are leaving behind other cities that were



better off. However they do not explain and neither do the population ask themselves the reason for such progress.

#### **8.4.2 Simulating some policies: testing the robustness of the model**

To test the robustness of the model, I present a simulation of two national policies that are being implemented by the current government of Mr Vicente Fox. The first simulation deals with a policy aiming at increasing 7% the investment in education. The second one deals with an increase in the central government funds transferences to local governments of 8%.

For the first simulation (dealing with education), each of the following variables will be augmented in its value 7%:

1. Post-graduate students/100,000 population.
2. Registered public expenditure in R&D/Total population.
3. Number of elementary schools/population under 12 years old.
4. Number of universities and post-graduate institutions/100,000 inhabitants.
5. Illiteracy rate.
6. Public libraries/100,000 inhabitants.

For the second simulation (dealing with an increase in the local governments' budgets) each of the following variables will be augmented in its value 8%:

1. Local government total revenue/population, taxes per capita collected.
2. Local government total social expenditure public works/population.
3. Local Government investment in housing, Mexican pesos per capita.
4. Total expenditure in city promotion/population, Mexican pesos per capita.
5. Total public investment in Mexican pesos/Total population.
6. Km of roads and motorways/Total population.

The following tables present the results obtained from the simulations where the objective was to evaluate the impact of these policies on the economic development index of the cities. The simulations will be only carried out with data from the year 2000 and assumes no change in the other variables. This is intended as a mechanism to isolate the effect of such policies. On the other hand, the trends can be assumed as constant over time according to the previous results.

*Higher education expenditure*

Apparently the effect of increasing education expenditure has a positive effect in the sample of cities. The indexes seem to converge providing a better development picture of the cities contained in the sample. These results are congruent with the traditional economic development argument that claims that education is one of the best mechanisms to reduce inequalities.

In table 8.10 is possible to see the structure of the ranking and its values after applying the model. An additional comment important to remark is the that the cities tended to group more evidently around close values than in previous results. This could be due to the effect of the allocation of the variables related to education in the model. Since two variables were part of the technology factor, which is taken as an exponent in the model, the impact of a 7% increase shows how sensitive this factor is and its effect in the overall performance of the model, as it might be expected.

**Table 8.10**  
**Impact of the education policy on cities**

City	Index	City	Index
1. Monterrey	129.74	21. Villahermosa	59.13
2. Chihuahua	128.40	22. Tampico	57.49
3. Queretaro	122.32	23. Puebla	54.52
4. Torreon	124.17	24. Hermosillo	48.33
5. Saltillo	114.60	25. San Luis	43.41
6. Mexico City	113.57	26. Leon	40.17
7. Cancun	110.48	27. Tepic	39.75
8. Tijuana	107.36	28. Cd. Victoria	33.46
9. Aguascalientes	102.88	29. Xalapa	31.33
10. Mexicali	93.32	30. Durango	30.67
11. Guadalajara	91.44	31. Morelia	29.87
12. Veracruz	87.35	32. Pachuca	28.58
13. Zacatecas	82.15	33. Chilpancingo	27.39
14. Toluca	78.65	34. Tlaxcala	24.25
15. Culiacan	77.94	35. Tuxtla Gtz	22.07
16. Colima	74.08	36. Acapulco	20.69
17. Cd. Juarez	70.12	37. Guanajuato	19.45
18. La Paz	65.17	38. Oaxaca	18.36
19. Merida	63.87	39. Campeche	18.34
20. Cuernavaca	63.52	40. Chetumal	16.37

In conclusion, the model suggests a convergence in terms of the indexes when education is embraced as part of a policy. Education once again provides a good option to reduce the economic asymmetries of these cities.



*Higher local government's expenditure*

The second simulation deals with the national policy to increase 8% the transferences to local authorities in order to grant them more financial independence according to their political trend.

Table 8.11 shows that unfortunately this policy did not have any important effect according to the model. What is possible to observe, however, is that the megalopolises lost places and went down, while middle size cities took their places and improved their position. The model shows how government efforts are impacted by population size the rise in expenditure fades considerably in large populations, while in medium and small cities the same rise impacts more positively.

**Table 8.11**  
**Impact of the rise on the local governments' budget**

City	Index	City	Index
1. Chihuahua	142.36	21. San Luis	52.39
2. Queretaro	128.70	22. Tampico	51.67
3. Tlaxcala	123.84	23. Puebla	50.26
4. Aguascalientes	119.82	24. Hermosillo	46.06
5. Saltillo	115.64	25. Leon	33.72
6. Monterrey	103.31	26. Villahermosa	29.33
7. Cancun	101.76	27. Tepic	27.54
8. Tijuana	94.01	28. Morelia	26.92
9. Zacatecas	92.25	29. Xalapa	21.15
10. Mexicali	90.43	30. Cd. Victoria	17.79
11. Cd. Juarez	87.57	31. Durango	17.63
12. Colima	84.68	32. Tlaxcala	16.47
13. Mexico City	81.79	33. Pachuca	14.82
14. Toluca	79.91	34. Tuxtla Gtz	13.53
15. Veracruz	73.94	35. Acapulco	12.11
16. Guadalajara	71.26	36. Chilpancingo	10.09
17. Cuernavaca	68.14	37. Guanajuato	9.65
18. Culiacan	66.03	38. Campeche	9.23
19. La Paz	60.48	39. Oaxaca	8.91
20. Merida	54.67	40. Chetumal	8.77

One of the effects of this policy is that the difference in the indexes of the last ten cities decreased notably in comparison with all the previous tables. Nonetheless, the rest of the cities maintained the gap and in some cases it was increased mainly in the middle of the table.

To sum up this simulation, it is important to mention the low impact of policies aiming at improving local governments' variables. The model seems to suggest no change in the position of the cities and their indexes. On the other hand, it points out the problem for big cities to tackle their problems since any attempt to solve a problem will be diluted amongst their excessive populations as it would be expected.

### **8.5 Concluding remarks**

The unequal economic conditions of the Mexican cities are notorious and thus there is a need to study some of the reasons leading to this fact. The unbalanced economic conditions has brought about poor and rich cities with different growth and development rates dividing the country between the competitive and attractive places where "every" wants to live, and the places where "everybody" has to live because there is no other option. Under such conditions it is imperative to study the role of competitiveness and attractiveness to assess the opportunities for economic growth and consequently economic development.

In this chapter I firstly proposed that economic development could be portrayed as a function of competitive and attractive factors derived from a theoretical analysis. Yet, the empirical evidence suggests that it is possible to decrease the traditional problem of complex econometric models to assess the city's economic possibilities through the analysis of a set of variables. Nonetheless, the expected method of panel data led to a reduced model with only 9 variables and although it is statistically valid, it lacks of the original objective of providing policy makers with a tool to evaluate the impacts of their strategies. Due to this fact, I proposed a model where all the original variables were incorporated. The results of the model seem to represent properly the Mexican reality and its economic discrepancies. Yet, simulating a couple of policies provided a good insight to evaluate the robustness of the proposed model as well as to corroborate whether the national government is really putting the cities at the core of its strategy or not.

It is evident that the gap between cities is increasing and the goals of economic development have not been achieved. The model seems to capture the effect of some national policies over the sample of cities as appreciated in the simulation exercise.



To sum up, the creation of the econometric models seem to provide a "testing system" aiming to forecast the effects of strategies designed by national and local governments but only in few variables without all the factors originally studied included in the final model.

So far, it is possible to suggest that grouping attractiveness and competitiveness factors serves as a new way to portray the development function for a set of cities. The dynamic component of evaluating various cities at the same time provides a framework for policy making where the decision-makers can foresee the impact of their policies not juts in terms of their own cities but also with terms of the other "competitors".

# Chapter 9

## Final conclusion and implications for further research

### 9.1 Final conclusion

The economic and policy framework outlined here attempted to link, to understand and to enhance the relationship between urban economic development, urban growth, competitiveness and attractiveness in order to determine the development level of a group of cities. This research provides a means to integrate and reconcile conflicting perspectives (regional economics vs urban economics; cities compete vs businesses in the city compete) and empirical findings regarding the way local economic development is evaluated. Portraying economic development as a function of competition and attraction of capital leads to several useful statistical functions helping to capture more variance from a complicated concept.

It was also demonstrated that competitiveness and attractiveness must be at the core of any government strategy to improve the local standard of life. It was also pointed out that while attractiveness factors are associated with the ascending process of any economy, competitiveness factors serve as the mechanism to sustain that growth generated by attractiveness conditions.

Throughout the theoretical framework, I presented a set of theories aiming to support the argument about what factors and variables are associated to competitiveness and attractiveness. Nonetheless, the evidence was not totally conclusive but provided a robust structure to create a development model capable of representing the current economic trends of a set of Mexican cities. At the same time, the model provided a good opportunity to assess the possible impacts of a couple of national policies. The results agreed with results presented in similar research studies.



As it was seen in chapter 7, it is possible to evaluate the differences among cities using traditional variables associated to competitiveness or attractiveness without losing representation. What is more, the scope of such approach seems to show clearly even some reasons to explain the economic differences. This approach can also inform about the weaknesses that lead to a low development level and also to give concise information about the kind of incentives required by each city according to its development stage.

It has also been demonstrated that attractiveness and competitiveness are not the same. What is more, when they are integrated into the concept of economic development, they represent completely different stages of it, and each of them represents a specific platform to induce growth or development according to the case. The set of urban policies aiming at competitiveness are almost out of control by local governments who rely on macroeconomic policies at national and regional level to achieve economic objectives. On the other hand, attractiveness policies are almost completely under local government control. This leads to the confirmation that attractiveness policies lead to induce a growth cycle only to certain level, and from this level on, competitiveness policies take over to induce not only more growth but also to redistribute the new wealth among the vast majority of the population.

The regression model showed that whether we like it or not, economic variables have a lot of relevance within the cities. At the end of the day, cities are economies and we must not forget that the original sole purpose of the cities was the exchange and trade of goods and services, and even today the flows drive the performance of cities in the whole magnitude.

The urban policy implications of conceptualising economic development in this way deal with the notion of a more “manageable” information system. Firstly, local authorities can focus on specific strategies according to its development level (whether they are at the bottom or at the top). Depending on their case, strategies to grow or to sustain a high growth pace, local governments could have an option to evaluate the possible results of their policies based on a group of indicators that produces a dynamic development index which also serves to analyse the “competitors” movements. Secondly, it is notorious how the impact of national

policies varies extremely according to the region of country and how the governments has done very little to correct the problem.

On the other hand, the model shows how the dynamics of urban policy strategies create a complex situation where time lags play an important role. The advantage taken by high performers puts them in a position where they are making the rules of the economic game, while low performers in most of the cases are followers copying strategies. The model exhibits the case of Aguascalientes as a city that made a fast process moving up quite a few positions in ten years to become a competitive and attractive place. Therefore time becomes a factor to split winners and losers; it could be assumed that more competitive cities react faster than less competitive ones and thus increasing the asymmetries among them.

Recent economic data from Mexico provides evidence that local economic development can be into some extent both efficient (it is not a zero sum game since all cities had growth in 2000) and progressive (some disadvantaged cities benefited more than some rich cities, even though just in very few cases). Political systems that respond to economic difficulties with development strategies could lead to better economic outcomes that are more efficient and more progressive. Giving more support to human resources variables is desirable but not necessarily more efficient in terms of resource allocation.

It is important to make some final comments about the quality of the data. Since most of the variables were generated from Mexican census' data, there could be a bias in the way the information was generated or presented to "make-up" the results in the hope of presenting a better situation than the real one. However, the Mexican government has invested massive amounts of money in technology to cope with such doubts and to produce reliable data with good quality and in less time.

The doubts could be cleared up, at least in terms of this research, due to the consistent results obtained. The models analysed were certainly congruent with the reality (no low performers appeared highly ranked) and no exceptions seem to stem from any of them. What is more, information derived from other sources is consistent with the census. Although, it is important to mention that there are no other sources of



information besides the census and the National Bank of Mexico database producing such amount of data and this posits some considerations. For instance, there is no way to cross-check variables due to the lack of other sources. Few independent surveys, if any at all, have been done to compare economic information at city level and in many cases local authorities are in charge of producing their own data which in some cases is just a compilation of census sources and forecasts.

The effort made by the Mexican government to produce data at city level is helping the country to attract more investment since it is possible to compare cities within the country and with other cities around the world. Secondly, the availability of more data contributes to the reduction of corruption and money flows are transparent thanks to availability of more points for reference.

The models could be applied to Latin American countries since the reality of them is close to that of Mexico. Nonetheless it would be possible to exclude small Centro American countries due to the number of cities they have. For instance Panama has only three important cities, reducing the likelihood of a reliable statistical result owing to a very small sample. The models could fit very well countries like Colombia, Bolivia, Venezuela, Argentina (despite its economic problems, linked to the way the regions and cities build up an unmanageable debt), Peru and Brazil, where a large number of cities exist and their economic differences are similar to those of Mexican cities as well as the government systems with three levels. Chile being a small country (regarding population, not territory) with five cities concentrating more than 80% of the total population represents a special case of study.

The application of the main model to developed countries faces some drawbacks since this kind of countries have cities with less marked economic asymmetries. One of the main restrictions relies precisely on the fact that developed countries' cities are more alike, reducing the capacity of the model to capture statistical differences. In order to reduce this problem the model would have to be calibrated by city size (population) and by GDP contribution to the national one. In this way, it could be possible to distinguish more clearly the difference in development levels proportionally to cities' population and size of the economy.

There is another issue to be solved for the model to work in such conditions and it deals with the factor quality of life. Across Europe, for instance, quality of life is more or less standard or differences are few and statistically low, reducing in real terms the number of factors in the model. Thus it is possible to conclude the model lacks of a capacity to portray the western European case, but it could possibly fit the case of Eastern European countries with economies more similar to those in Latin America.

It can be concluded that the unfolded model could be generalised adjusting some elements of it:

1. Weighting the size of the city in relation to the whole country, this would improve its capacity to capture statistical variance in the case of countries where cities have less economic differences.
2. Dummy variables could be included to portray non- statistical indicators such as the availability of ports, refineries, advanced training centres, and so on.

As in any generalisation, adding more averages tends to increase the likelihood of errors and therefore the risk of misinterpretation increases. In the case of Latin American countries, there is no need to add more features to the model since developing countries' cities exhibit enough differences among them.

Whether Mexico is a typical Latin American case or not, could be subject to debate. Its geographical position and trade patterns put Mexico in a special situation in comparison with the rest of Latin America so that for some scholars the "reality" presented here could not be typical of other countries in the region. In spite of such limitations I consider that many of the results will be very similar had the analysis been undertaken in other countries in the region. The recurrent economic crises, social unrest, political instability and extreme social differences are common in all Latin America. Today, quality of life is still a big issue for most of these governments, extreme poverty (or deprivation) is without doubt the main problem for politician at all levels.

Thus, this thesis could serve as a reference to model the dynamics of competitive process and development trends not just in the Mexican context but in the Latin American one too. Assuming there are data for other countries, it would be a tempting



experiment to compare different cities and thus analyse and prove how “equal” the cities are in this region of the world.

An almost mandatory question which arises before a final conclusion is what factor is more important: competitiveness or attractiveness. There is no conclusive evidence to argue which one is more important because as it was presented in the literature review, each one serves public policy specific purposes depending of the economic development level prevailing in the city and the tendency of the political party in power. What is more, looking for an answer to this issue would lead inevitably to rank also which of the nine factors is more important and even then, it would be necessary to rank the variables comprising that factor.

Ranking cities using competitiveness and attractiveness factors proved to capture the so-called poverty trap. The cities in the low part of the figures are clearly experiencing social unrest. A suggestion for future research is to apply the model to a larger sample of cities, including more countries to gauge the model. In this way two topics could be tackled: how the model forecasts future “low performers” and consequently future sources of social problems and whether or not the problems of Latin American cities are alike.

Future research is needed in more specific areas of competitiveness and attractiveness. New forms of competitiveness need to be evaluated in the context of Mexican cities, not to create rankings but for searching possible strategies to integrate small cities to a positive cumulative cycle. Competitiveness based on networking could work to generate strategies aiming to link cities with low trade levels with those having higher income levels.

It is clear that competitiveness as a ranking of cities/countries is outdated and provides no benefit. On the other hand, competitiveness as a tool to evaluate economic development seems to provide a good framework to analyse the conditions that keep an economy moving upwards.

In the field of city attractiveness, there is still a proven need for more econometric models to increase the robustness of the concept. It is at its early stages of

development and it has not reached the sturdiness of its counterpart competitiveness. It is clear that attracting high skilled people is not the same as attracting businesses or investors for long time projects. In this way, studies looking at the determinants of attractiveness for high skilled workers could serve to improve the chances of a city to obtain more workers with this desirable characteristic. This would ignite a positive cumulative growth process and therefore development would follow.

Finally, this thesis can be useful for the private sector; a research like this could serve as an analytical tool to predict business opportunities in emerging cities with potential economic growth. Other cities can be evaluated according to the selected factors as potential places for relocating an assembly plant or simply to start new enterprises.

There is a need for a more systematic research that examines the interactions between quality of life and market and economic factors to understand how they shape the socioeconomic context of cities. Quality of life is now a priority for any government and in some cases economic factors have been sacrificed to assign more resources to it.

Little research, if any, has been done about weighted factors in both competitiveness and attractiveness theories. This fact is important because it could lead to more accurate forecasting models and better simulations providing a more realistic framework for policy analysis. It is not possible to neglect the renewed attention received by politicians and how modelling socioeconomic conditions has become a “must” in any project.

To sum up this thesis, it is possible to claim that the objective of conceptualising urban economic development as a function of competitiveness and attractiveness seems to be achieved. The theoretical sections showed that putting together various variables and factors is more a strength than a weakness to represent how cities grow and develop in a dynamic way.

Regarding the development of Mexican cities, it can be said that there is still a long way to go to understand the uneven economic system prevailing. Nonetheless the central government is now convinced that the real players in the current economic



competition for attracting capital around the world are cities rather than countries and regions are the supporting arena for the cities which require cooperation and assistance from cities nearby so as to compete successfully in national and international markets.

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#### **Data sources**

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2. INEGI. Gobierno del Estado de Aguascalientes. Anuario Estadistico del Estado de Aguascalientes. 1997, 1998, 1999, 2000.
3. INEGI. Gobierno del Estado de Baja California Sur. Anuario Estadistico del Estado de Baja California Sur. 1997, 1998, 1999, 2000.
4. INEGI. Gobierno del Estado de Baja California. Anuario Estadistico del Estado de Baja California. 1997, 1998, 1999, 2000.
5. INEGI. Gobierno del Estado de Campeche. Anuario Estadistico del Estado de Campeche. 1997, 1998, 1999, 2000.
6. INEGI. Gobierno del Estado de Coahuila. Anuario Estadistico del Estado de Coahuila. 1997, 1998, 1999, 2000.
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